

THE MACDONALD COLLEGE MAGAZINE.

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EDITORIAL

The fact that this issue is not only the second number of the COLLEGE MAGAZINE, but also forms the second "Trifolium," is sufficient justification for the insertion of the three articles dealing respectively with the three schools of the College. A perusal of these articles leaves us with the impression that none of these departments shows more rapid progress, or a more intimate relation to, and recognition of, the practical needs of every life than the School of Household Science. The scientific study of the practice of home-making has only very recently attracted the attention of educational re-

formers, and their development has been hastened by the powerful aid of modern invention and scientific discovery.

The most encouraging feature of the School, however, is its development on the practical side. We are not qualified to speak of the progress of Domestic Science in other Colleges, but we can hardly praise too highly the wisdom shewn in the policy of giving each student a week's practice in House-keeping in the Apartments, where she has to carry out in practice those principles learnt in the Classroom or the Laboratory, nor that shewn in the more recent innovation by



THE EDITORIAL STAFF OF THE COLLEGE MAGAZINE

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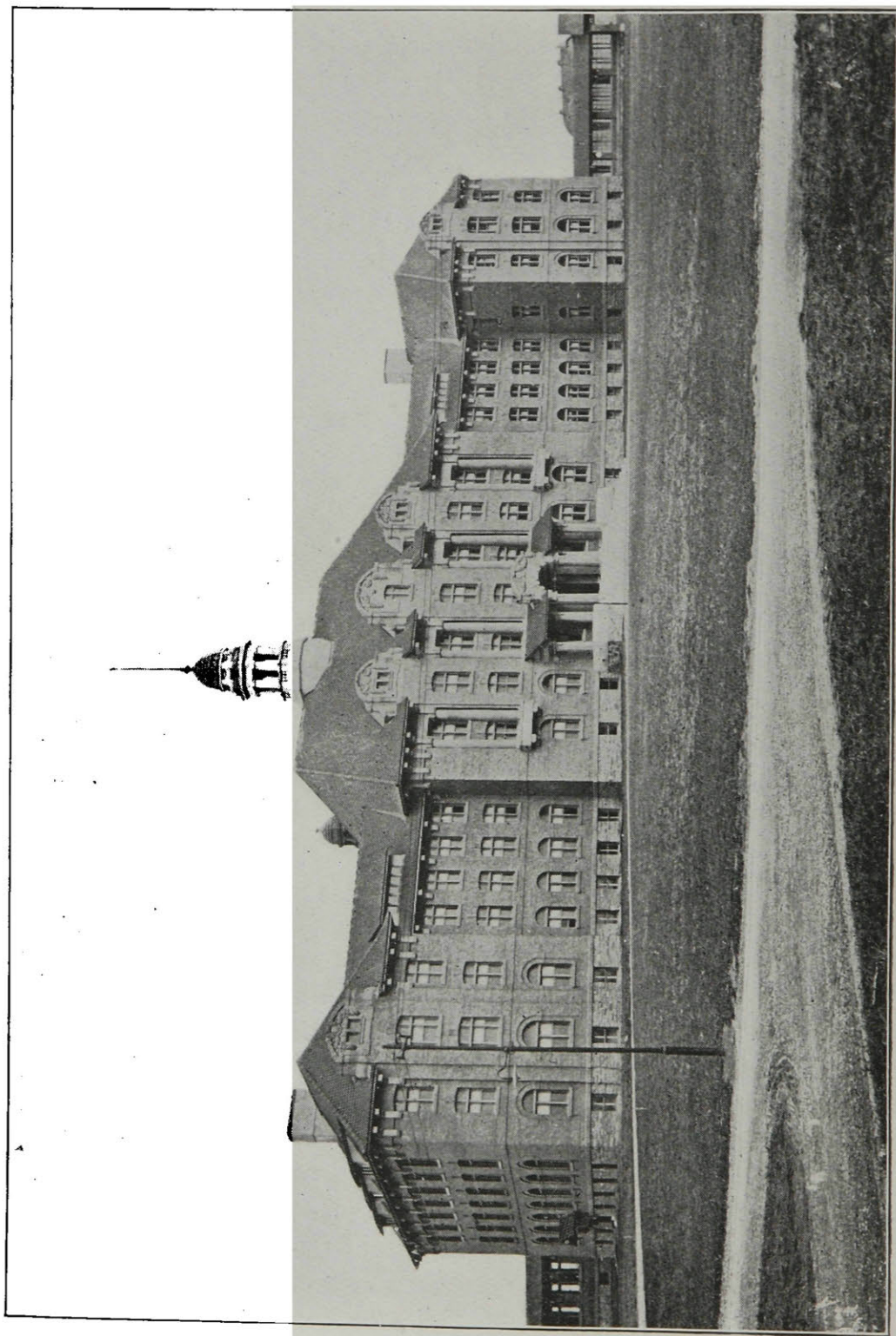
which the senior students execute, at reasonable cost, orders for dishes sent in by members of the College. The continued success with which this experiment has met is the best testimonial to the students themselves and to their instructors. The pity of it is that these things are not better known and realized in the homes of rural Quebec:

* * *

An impartial observer of this College would certainly be of the opinion, that the social life of our community is in anything but a moribund condition. But none of the many and successful functions that have taken place since that social life began, has aroused such universal interest or has been attended with such keen enjoyment as the recently concluded series of Debates between the three classes at present in the School of Agriculture. We can imagine that to the appointed protagonist of his class, harassed by doubts and fears, and hampered by paucity of material or, even worse, of self-confidence, the game seems hardly worth the candle. But now that the last battle has been won and lost, we think that every one of the twelve champions of their respective years will admit that he has undoubtedly taken a long step towards fitting himself for the battle of life. The long hours he spent over uninteresting pamphlets and dusty books, the endless discussions of points and rebuttals, and above all, the ordeal of addressing, perhaps for the first time, an audience of four hundred people—were not wasted, even if the verdict of the judges was against him. He knows now that he can “speak in public,” for he has accomplished that feat; and the self-confidence born of that knowledge will stand him in excellent stead, not many years hence.

Towards the middle of June the close of the Session as regards the girl students is the signal for a general exodus from the Women’s building. Its fair denizens disperse to seek a couple of months’ relaxation and enjoyment. After the closing day the groups of white-frocksed students strolling on the Campus or Oval, or decorating the windows or the steps in front of the building, and generally absorbed in the contents of note-books, vanish as by magic. For two and a half months the student-apprentices dine and sup, like monks in a refectory, deprived of the charms of feminine society.

But here surely is an excellent opportunity for our Provincial Government to provide at once a most valuable course of instruction and a still more valuable holiday to the hard-worked teachers in the schools of Quebec Province. Why should not the plan initiated by the Ontario Government at Guelph, where a three months’ course in Nature Study and kindred subjects is offered to Teachers in that Province without cost, be followed here? To the city teacher, wearied by many months of monotonous class room work; and longing for a change from the rush and bustle of the city streets, a couple of months under the ideal conditions of MacDonald College would be a boon indeed. And the benefit derived by hundreds of teachers would be extended later on to thousands of pupils. The remuneration of a teacher is not such as to do credit to our civilization, but such a scheme would do something to render more attractive a great, though ill-rewarded, calling.



THE MAIN BUILDING, MACDONALD COLLEGE.

The School of Agriculture of Macdonald College.

Its Aim and Methods.

By W. LOCHHEAD, B.A., M.Sc., Professor of Biology at Macdonald College.



COLLEGES of Agriculture are new institutions compared with Colleges of Medicine, Arts, Law and Engineering, although it is stated that Alfred the Great established a school for the training of boys in the elements of agriculture at Oxford more than a thousand years ago. So far as America is concerned, however, they have been in existence for only about forty years, but their influence on the improvement and development of agriculture has been most marked, more especially during the last two decades.

The youngest College of Agriculture on the list is the one at Macdonald College, which owes its existence to the generosity of Sir William Macdonald. The aim of the founder was to help the large population on the farms of this Province to a better knowledge of their occupation, in order that they might get larger and better returns from their land, live more happy and contented lives, make more of themselves, and furnish leaders for the general uplift of the whole country by "redirecting the practices and ideals of country life."

The founder has done his part nobly, and it remains to be seen with what measure of success the instructing and administrative Staff carries out his wishes in this matter. Success will depend largely upon the methods adopted. First of all the young men

of the farm must be attracted to the College class rooms and given such a combination of practical and scientific knowledge that they are anxious to return to put this knowledge into actual practice. By this means a number of educated young men will be free every year to go back to the farms and to influence the communities in which they reside.

Many farmers, and many who are not farmers, have but a faint conception of the nature of the instruction given at an Agricultural College. Agriculture is no longer the occupation of the ignorant; on the other hand, it demands most careful training in many branches in order to secure the best results. Dealing primarily with the soil, the plant and the animal, agriculture is a complex of several sciences, namely, botany, zoology, bacteriology, physics, chemistry and geology. These require to be taught with special reference to their bearing on the great farm operations of growing of crops, breeding and management of stock, fruit-growing, cheese and butter making, and poultry keeping. As these are all essentially practical subjects, the instruction is given mainly by the laboratory or scientific method whereby each student handles, observes, and experiments with material provided for the purpose in the laboratory, field, or stable. In other words, the student learns by doing. The study of the Sciences enables him to understand



J. BRITTAIN, D.Sc.



W. S. BLAIR.



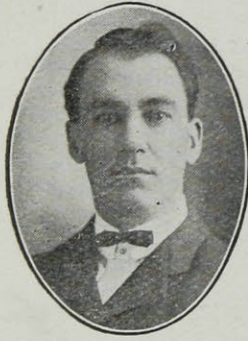
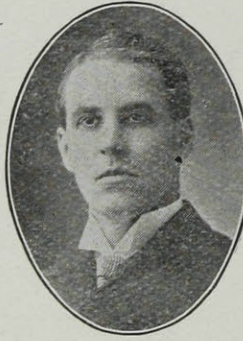
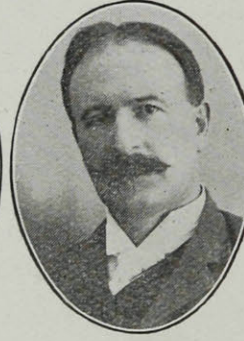
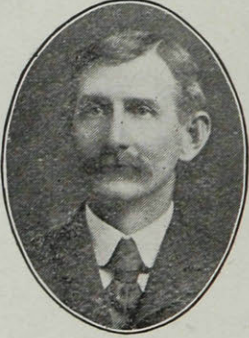
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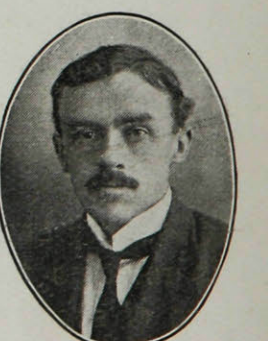
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OFFICERS OF INSTRUCTION. SCHOOL OF AGRICULTURE

the underlying principles involved in the practices of the various branches of agriculture.

In addition, the up-to-date agriculturist must know something about the machinery used on the farm. Accordingly, instruction is provided in Manual Training, including both wood and metal working, and in the care and use of machinery. Not unmindful, too, of the part the agriculturist as a citizen should take in the affairs of his com-

vidual farmer is to be helped, and if the great majority of the farmers are to get into touch with the work of the College. So long as the College confines its efforts to the students, its influence will be but feebly felt for many years. Farmers do not take kindly to the "book larnin'" of Colleges, unless it is backed up by ocular demonstrations of the practical value of such instruction. But as soon as the farmers find that the College



A CLASS AT WORK IN ONE OF THE BACTERIOLOGICAL LABORATORIES.

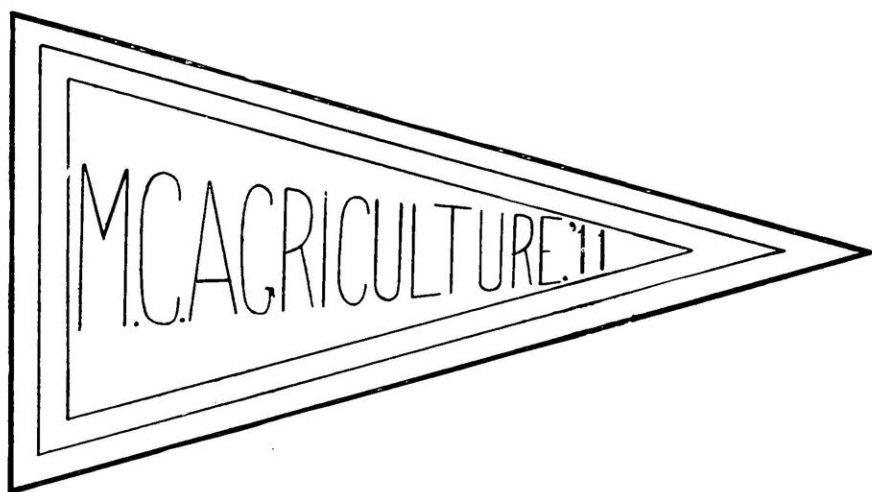
munity, the College gives considerable attention to English and Public Speaking.

It is believed that this combination of practical and theoretical instruction provides the best training for the young man who purposes returning to the farm.

In the second place, the College should of necessity develop some organized system of extension work outside of the class rooms, if the indi-

professor and the College graduate are practical men and know what they are talking about, they are willing to take advice and to act upon it.

It is essential, therefore, that the College Staff should have opportunities of conferring frequently with the farmers at their Agricultural Societies, at their Fairs and at their Annual Conventions. Short courses in Stock Judging, Grain Judging, Fruit Growing, etc., should be held at different centres



Agriculture, Class of 1911 with the Hon. President, Dr. J. W. Robertson, and the Hon. Vice-President, Mrs. J. F. O'Hara. The Year Executive for 1909-10 is as follows:—President, A. Savage; Vice-President, R. Summerby; Secretary-Treasurer, F. E. Buck; Committee, W. H. Brittain, W. Logan.

in the Province, so as to get into personal touch with the farmers, and to show them the practical value of the instruction given. Experience elsewhere has shown that Short Course students often become students of the longer courses given at the College.

An effort should also be made to have the farmers carry on co-operative experiments under the direction of the College. This implies, however, facilities at the College for extensive experimental operations requiring much help and considerable outlay of money. The object of such work is to get the farmer to try new and better ways of doing things, to make improvements in his method of farming, to plant better and purer seed, to see the importance of better stock, better buildings, better fruit, and a better rotation of crops.

Moreover, farmers' excursions to the College should be arranged for, preferably during the summer, because at that season the crops of the farm, the orchard, the garden and the experimental plots, which are perhaps of the greatest interest to farmers, can be observed and studied to the best advantage. Many a farmer, unconvinced by mere statements at meetings and in the newspapers, becomes a convert to new methods when he sees how well those new methods work out in actual practice.

Again, the association of the School for Teachers and the School of Household Science with the School of Agriculture brings many of the young women who are to influence the rural boys and girls of this Province into a fuller sympathy with farm life. Women, we believe, will play no small part

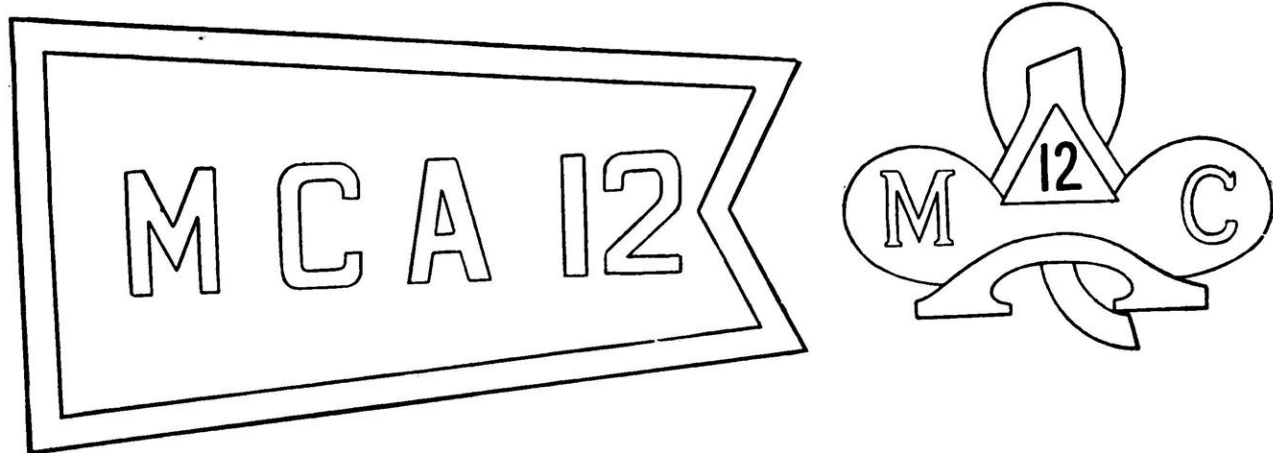
in the renaissance of country life, and it is important that their interest and co-operation be secured at the outset.

A third method of increasing the influence of the School of Agriculture is by the prosecution of research work. Every Department of the School should have the time and the facilities for the investigation of economic problems, of which there are many awaiting solution in every line of agricultural endeavor. Research makes for stronger men, with a firmer grasp of the situation. Research workers speak with authority, and as a consequence their influence everywhere is greatly increased.

It is important, moreover, that not only the results of the researches, but also other useful information—the results of past researches—should be published in bulletin form and distributed as widely and as freely as possible among the farmers. Bulletins should form a valuable part of the farmer's library.

These are some of the methods by which the School of Agriculture hopes to realize the aim of the founder.

"Our Agricultural Problem is one of constant readjustment to conditions, and this readjustment can progress only through the diffusion of greater intelligence. Knowledge and education lie at the very foundation of the welfare of the open country. Information and knowledge, however, and even education, do not of themselves constitute reform or progress. We need legislation and broad redirection of social and economic forces; but education lies behind and at the bottom of all these movements, and without it no lasting progress is possible."



Agriculture, Class of 1912. The year Executive for 1939-10 is as follows: President, R. Newton; Vice-President, R. W. D. Elwell; Secretary, E. Lods; Treasurer, L. C. Raymond; B. Richardson.



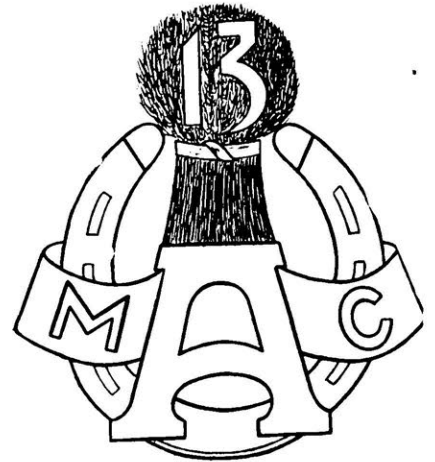
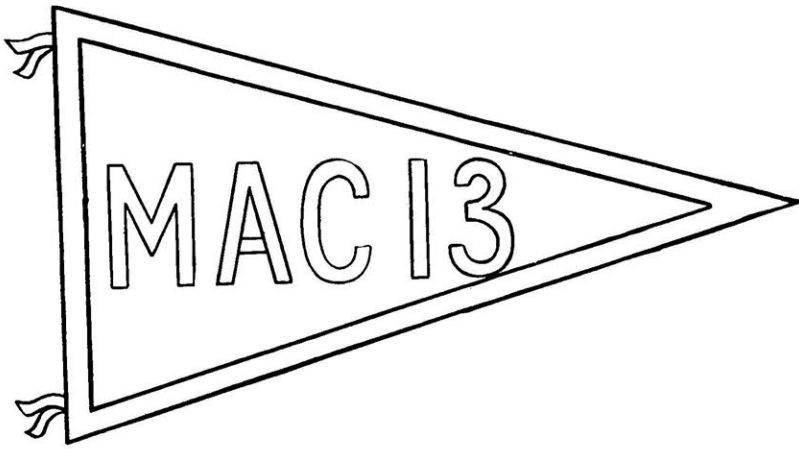
Production and Markets.

By H. S. ARKELL, M.A., B.S.A., Professor of Animal Husbandry, Macdonald College.

THERE are a few rather remarkable things that impress themselves upon one's attention in even a very general study of the movement of live stock products from the source of supply to their ultimate market. Perhaps no one thing is more significant than the changes which have developed within recent years in the exports and imports of the great producing and consuming countries of the world. Great Britain has always been and still continues to be the most important, I was going to say the only important market for the surplus animal products of other and newer countries. It is estimated that the people of the United Kingdom consumed in 1908, 1,197,843 tons of beef and 579,410 tons of mutton and lamb. The per capita consumption of meat is 121.3 lbs., a much larger amount than the average of the continental countries. There is freer consumption both of meat and butter in Great Britain

than formerly, and though Siberia, the Argentine, North America, Australia, New Zealand, and even continental Europe continue to pour in supplies, prices are fairly well maintained. Great Britain may be relied upon to remain an important purchaser in the world's markets.

Hitherto the countries of continental Europe have practically remained closed to the importation of foreign animal foods, but it seems probable that France and Germany may shortly accept terms for more unrestricted reciprocity and, if so, a vast market will be opened up which cannot but have an immense influence upon production in other countries. Arbitrarily high prices for the better class of food stuffs prevail in Europe to-day, and many influences both within and without are apparently urging forward the policy of the open door. Germany has already made concessions. A few years ago this country was an exporter of butter. The improved condition of



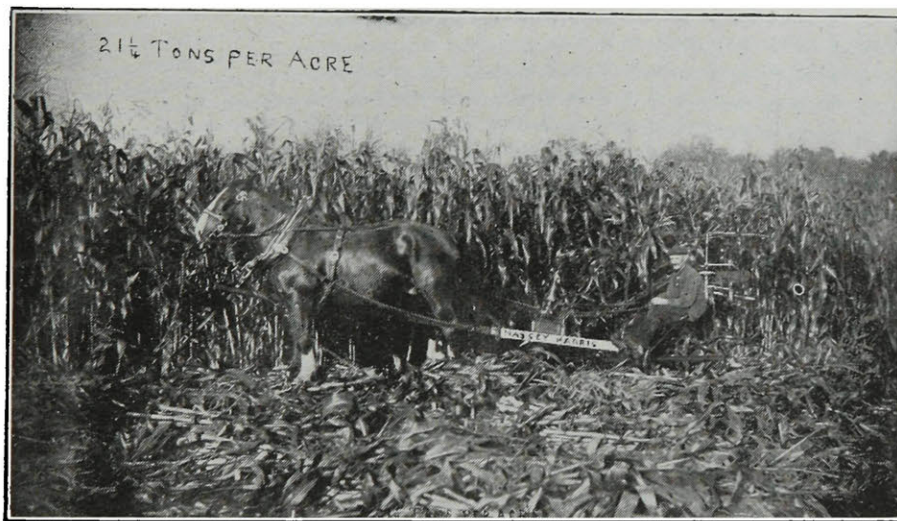
Agriculture, Class of 1913. The Year Executive for 1909-10 is as follows:—President, J. S. Dash; Vice-President, J. G. Ross; Secretary, W. Bond; Treasurer, H. Creelman, Committee:—A. C. Gorham, W. Gibson, W. Stewart.

the industrial classes, however, has enabled the poorer people to use butter more freely, and to-day Germany imports many million pounds. Further, by the recent tariff understanding between Canada and Germany, horned cattle are admitted to the latter country at a reduction from 18 to 8 marks per hundred kilos; sheep at the same rate and meats also at substantial reductions.

It will be interesting to note some of the changes that have taken place in the trade of the great producing countries of the world. Siberia's de-

country, in area no bigger than the Eastern Townships, exported in 1908 about 200,000,000 lbs. butter.

Canada is the leading exporter of cheese, sending to Great Britain annually an amount about equal in quantity to that sent by Denmark in butter. Within the last few years, however, the quantity of exports has fallen off somewhat, although it is probable that production is increasing. This fact is even more true of the United States. This country is said to be the greatest cheese producing country in the world and formerly exported large amounts



MACDONALD COLLEGE FARM. CUTTING ENSILAGE CORN.

velopment is one of the most surprising. A few years ago this country was a barren waste, but the Trans-Siberian Railway brought in settlers and opened up the way to commercial relationships with other peoples. In 1894 some 14,000 lbs. only of butter were exported. In 1908 the trade had grown to an export of something like 135,000,000 lbs. Siberia's expansion is likely to have a direct influence upon the world's trade. In 1868 this country was largely interested in beef raising, and it was estimated that the average cow yielded no more than 84 lbs. of butter in the year. Yet this little

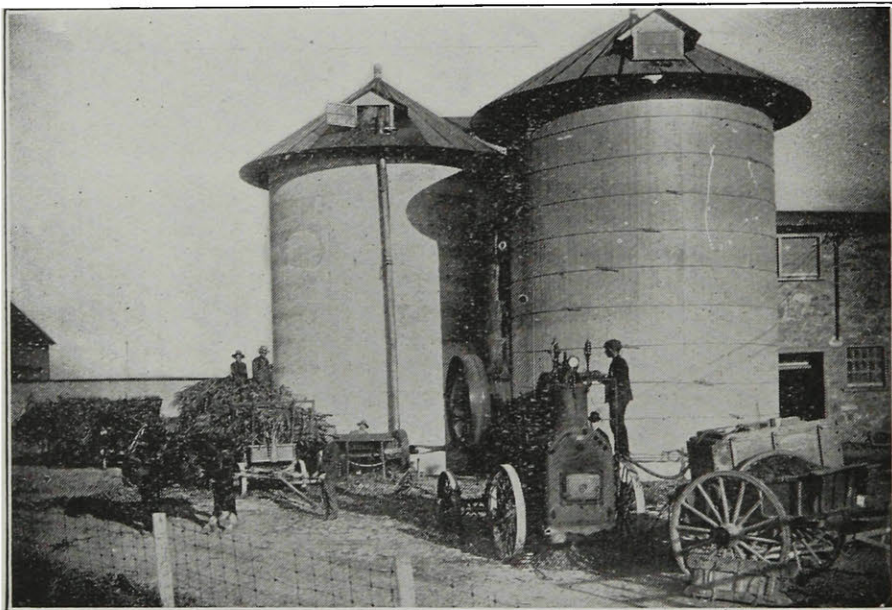
to Great Britain. Now, however, practically nothing is exported, all the product being required for home consumption. In the matter of dairy produce, North America seems to be rapidly approaching the time when consumption will equal production. A few countries are no doubt increasing their output, but many of the big sources of supply are not expected to send forward much larger quantities in the near future. Should other important markets open up, the stimulus to trade will be evident. If Canada should forge ahead in production at the present time, she might very well

achieve a supremacy in the export trade which would be of immense advantage to herself.

The world's trade in meat products has an important relation to the prosperity of the various countries involved. As was mentioned before, prices have been fairly well maintained in the foreign trade during the past year. Indeed, although Argentina has drawn upon its supply even until there was a depreciation noticeable in the quality of the material sent forward, there has been no appreciable glut

yet reached its limit in quantities of meat which it will export.

Australia and New Zealand are the other countries which continue to have an increasingly important surplus of meat products. Australasia sent forward in 1909 much more beef, mutton and lamb than in 1908. In the instance of mutton the market was somewhat overdone and prices fell considerably. At present the States are heavily stocked with sheep and the foreign market is receiving a plentiful supply. In the case of cattle raising,



FILLING TWO OF THE CONCRETE SILOS WITH ENSILAGE CORN,
MACDONALD COLLEGE FARM.

in the market. In 1898 Argentina exported only 12,128,256 lbs. of beef; in 1903 the amount had risen to 129,047,632 lbs; while in 1908 the output had increased to 400,369,088 lbs. Notwithstanding this fact, this general statement reaches us from Europe, that the world's production of live stock during the past four or five years has barely kept pace with the increase in population. Argentina meat is sent forward in the frozen state. It is expected that this country has not

New Zealand is now turning its attention more directly to dairying and the export of the best grades of beef is not likely to increase. Australia's biggest trade is in sheep, but it is continuing also to increase its export trade in cattle.

There are certain features of the North American trade which are interesting. Exports from the United States are materially declining year by year. In 1906 there were 584,239 cattle exported and in 1909 something

like 200,000 head. In 1903 there was an export of fresh beef amounting to 301,719,040 lbs., while for ten months in 1909 there were only 79,664,383 lbs. exported. Canada, whose trade for the most part is in live animals, exported to Great Britain in 1909, 113,583 cattle, or 7,493 head less than the previous year, and only 1,548 sheep for the twelve months. It is anticipated in Great Britain that there will be a continued reduction in receipts from North America, owing mainly to the increasing quantities required for home consumption. Some United States authorities estimate that in 10 years' time consumption in that country will equal production. It is evident also from the prevailing high prices and increased home demand for the products of the farm, that in Canada, unless production materially increases, there will be a continually decreasing surplus of meat products year by year. The gradual withdrawal of the North American output from the European markets is rather a significant feature of the world's trade.

It may be difficult to summarize the whole situation. One thing appears to be certain, viz., that at present the aggregate of demand is fairly well met by the aggregate of supply. It is true, however, that in certain thickly populated countries the

prevailing prices are high, and should these countries determine to make certain tariff concessions, the demand from them may have an appreciable effect upon the general market. One other feature appears to be important in its bearing upon present conditions, viz., the great development of the export trade in certain countries within very recent years. Denmark and Holland are instances of older countries sharing in this trade. Most of these countries however, are new, e.g., Siberia, the Argentine, New Zealand, Australia, the United States and Canada. This trade has apparently developed in conjunction with the increase of the world's population. It is to be questioned if any similar increase can be expected within the next few years. The new countries of the Globe have been heard from. North America has already shown an appreciable decline in her exports. Under prevailing conditions other countries may reasonably be expected to reach their limit in the same way. It would appear that the expansion of the future will be brought about through the adoption of more intensive methods of Agriculture. The country which will undertake now to lead in this expansion may be destined to have a very great future. Canada's is a rare opportunity.

The Growing of Profitable Crops for Dairy Cattle.

By J. H. GRISDALE, Dominion Agriculturist at the Central
Experimental Farm, Ottawa.

(Concluded from the previous issue.)



THE average seed-drill grass seeding attachment won't sow this quality of seed. Sow it by hand or by means of a special grass seeder.

Divide the grass mixture into two equal parts. Sow each part so as to entirely cover the field. Sow the first half of the seed lengthwise, then sow the second half crosswise, over the field. The first half might be sown from the grass seed attachment on the grain drill, the second half by hand across the seeder rows.

The expense may seem prohibitive, and does, I know, usually deter from this style of seeding. Such a seeding, leaving out the alfalfa, might cost from \$2 to \$3 an acre. The returns will be from ten to twenty dollars per acre better than from the average seeding. I have tried both ways for many years. I know. Try it. Then when you have the pasture use it wisely. Pasture down fairly well but not close. Give it a chance either by having enough pasture for the whole herd or by dividing the herd, or else by dividing their attention, giving the pasture a few days off now and again as needed.

So long as we continue to practise summer dairying almost exclusively as we do at present, in Eastern Ontario, methods of summer feeding must be more important than methods of winter feeding. Good pastures are of value, but even the very best of pastures run short in times of drought. Then how

shall we supplement? First and best by the summer silo. Cows always welcome good ensilage. Or, next best, by various soiling crops.

The summer silo means corn for ensilage. Corn for forage is easily the most dependable, the most profitable and the most economical forage crop in Eastern Ontario. Growing much corn means good farming. Good farmers are sure to grow corn abundantly.

Growing corn well means a number of things. Foremost a well drained field is necessary. This field is likely to give best results if it is in clover hay or pasture the previous year. An application of barnyard manure is almost an essential. It should be so applied as to be very near the surface when the corn is planted. The corn should be planted only when the land is in perfect tilth and warm.

To get the best results the right varieties, properly sown, should be the aim. Longfellow, White Cap, Yellow Dent, and Leaming, may be safely counted on all over Eastern Ontario. About equal areas of each will give good results. Sow thinly in rows 42 to 48 inches apart, or in hills 42 inches apart. Keep the field well cultivated and free from weeds from start to finish. Ensilage when in dough stage. Feed when necessary.

To feed add cut straw and a bite of long hay. Suitable meal to feed along with it would be bran, oil cake meal, corn and barley in equal parts. Cotton

seed meal, gluten meal, pea meal, or distillers' grains might replace the oil cake meal.

After corn come the soiling crops.

As king of soiling crops where it can be grown, stands alfalfa. If your corn field has been kept clean, is in good heart and lies gently sloping or is fairly rolling, sow the alfalfa there. Sow a small area to begin with. Sow a goodly amount of seed, 20 to 25 pounds per acre. Inoculate the soil or the seed if possible. Every ton of green feed from the alfalfa field is worth half a ton of milk, every ton of hay is worth a ton of bran or thereabout. As an inspiration to milk production on the part of the cow consuming, it is a marvel. Feed some dry forage along with green alfalfa.

Clovers mixed or separate follow alfalfa fairly closely and are somewhat more easily grown on the average farm. They, like alfalfa, only in a lesser degree, inspire the cow to renewed effort at the pail. Feed some dry forage along with clover just as with ensilage and alfalfa.

As make-shifts come our friends the mixed crops. Peas and oats; oats and vetches; peas, oats and vetches; peas, oats and barley; peas, oats, vetches and millet; peas, oats, vetches and hungarian grass; and peas, oats, vetches, millet, and sorghum, to say nothing of innumerable other possible and commendable combinations. Their great value lies in their certainty. Sow thickly 3 to 5 bushels per acre. Feed when just beyond the milk stage. Too early means a loss of food value, too late means incomplete consumption. As an early remedy soiling crop fall rye is of value. Another advantage is that it does well on lands where

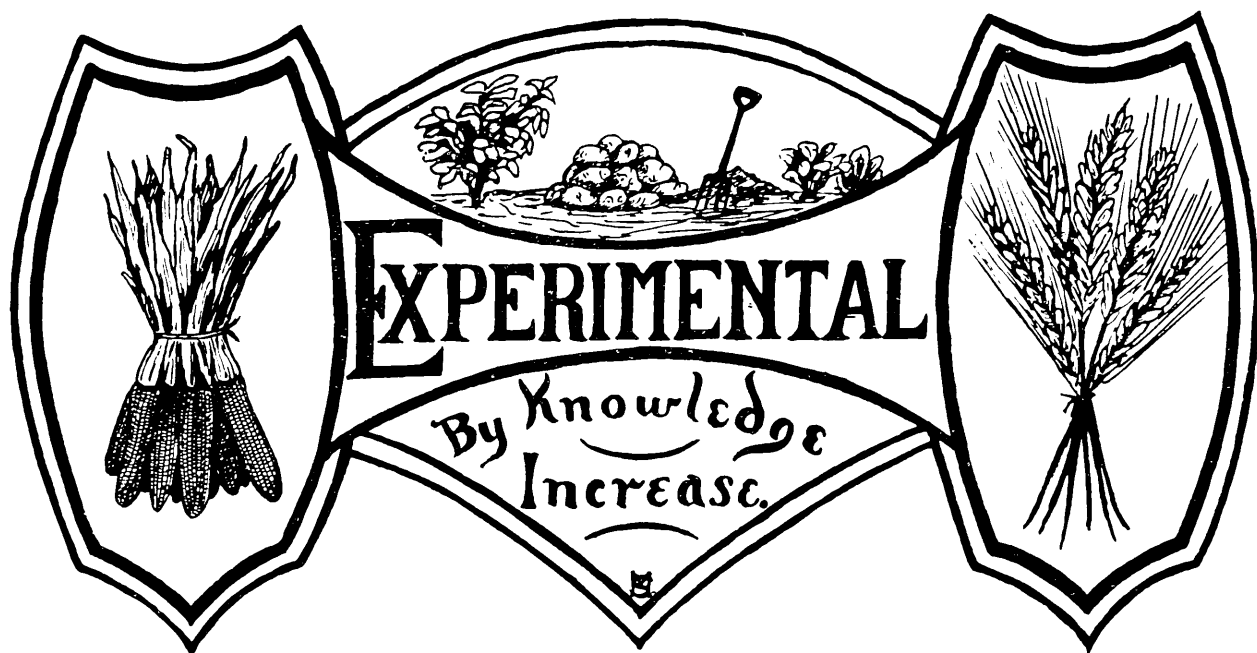
other crops will scarcely grow. Sow one bushel per acre in early September. Feed moderately for fear of flavor.

As roughage for winter use, corn ensilage again stands first. The addition of roots makes matters still better. For milk production, everything considered, mangels are probably the best.

To grow mangels necessitates suitable soil, well fertilized and well tilled. Plough in August with shallow furrow, work at intervals, manure, replough with shallow furrow and subsoil hook. Sow early, as early as ever you can. Sow on the flat or on ridges 30 inches apart. If on ridges pack well before seeding. Sow plenty of seed, 7 to 9 pounds per acre. Mammoth Long Red or Gate Post varieties are best. Keep clean, cultivate frequently. Harvest before heavy frost. Feed along with ensilage or alone if preferred. Mangels and corn ensilage form the best combination.

As to clover hay, alfalfa and mixed crops for hay for winter feeding, the remarks already made on these crops for soiling purposes will apply here.

Roumanian millet and Hungarian grass complete the list of the more common and the more advantageous crops for winter forage. These are of value first because in case of adverse weather conditions preventing other crops being grown they may be sown even as late as early July and still give satisfactory results. The soil must be worked well before seeding. It should be very mellow, very fine and yet very firm under foot. Sow 30 to 40 pounds per acre. Roll the land after seeding. Cut when in blossom or shortly thereafter. As a feed for milk production it ranks very high, being about equal to clover ton for ton.



The Cereal Husbandry Department.

By L. S. KLINCK, M.S.A., Professor of Cereal Husbandry, Macdonald College.

BRIEFLY stated, this department stands for improved crops and improved soils. To make application of known principles underlying the improvement of soils, and thorough investigation to discover new methods of maintaining and increasing the productive capacity of our lands, and to enhance the value of the cereal, forage, and root crops of our farms by the origination of varieties or isolation of strains of high projected efficiency, is the task that has been assigned to this department.

To attain these objects a tract of land, sufficient in extent to meet present requirements, has been allotted. This land has been surveyed into ranges, which, in turn, have been laid out into plots of different sizes, depending upon the nature of the work being conducted. The crops grown upon these plots furnish the best of illustrative material for demonstration and laboratory work with our students.

For foundation stock, the best available varieties, as years of testing at Guelph and Ottawa indicated, were secured. No attempt was made to get together a large number of varieties, the successful handling of which would have entailed an immense amount of unnecessary work and expense. The aim, rather, has been to confine attention to those varieties which have already demonstrated their adaptability to situations closely resembling our own, and then to direct our efforts to the improvement of those which show a wide range of adaptability, or special fitness for a particular situation.

In the improvement of field crops the individual plant system has been adopted. By this method, single plants are isolated which have the power of transmitting to their progeny the characters which they as individuals possessed. The plant is made the unit of selection. To secure suitable mother plants, foundation beds

are planted from the choicest stocks obtainable. Seeds from these stocks are planted in foundation beds, four inches apart each way, in plots one hundredth of an acre in size. At harvest time the medium and poor plants are discarded, and after a still more rigorous selection has been made in the laboratory during the winter, the exceptional individuals which have reached the standard required become the progenitricies of new strains. The following year one hundred seeds of each isolated mother are planted four inches apart each way in a centgener

general farm and sold to growers in the Province at a reasonable price for seed.

No work has, as yet, been done in hybridizing, as a careful study of varieties has shown a very wide range in the projected efficiency of individual plants. This range makes improvement within the variety possible by the selection of prepotent individuals of known performance record. When these strains of superior merit have been isolated and multiplied, crossing, followed by selection, may then be employed with greater chances of success, as they will afford the best pos-



IN THE COLLEGE EXPERIMENTAL PLOTS.

Field Peas which yield 55.2 bus. to the Acre.

bed. By this system many groups of progeny are grown in comparison with one another under conditions as uniform as it is possible to provide. At harvest time the progeny of the leading mothers is harvested separately and the product obtained from each centgener is used to sow a multiplying plot the next year. Those strains which demonstrate their superiority in the increased plots are then entered in competition with the original variety. If any strain so isolated marks an advance over the original stock after a five years' test it will be multiplied on the

sible foundation for intelligent mating looking towards the successful blending into one individual, of desirable characters belonging to two distinct strains.

In addition to the testing of 570,000 individual plants during the past three years, and the conducting of many lines of investigation looking towards the securing of data of practical benefit to those engaged in the production of field crops in Quebec, the department has laid out twenty small fields where research work, dealing with problems relating to rotations, tillage and crop production, will be begun this spring.

FIELD PEAS.

In the production of field peas the Province of Quebec stood second in the Dominion last year with a total yield of 752,000 bushels. Compared with Ontario's yield of 7,239,000 bushels, the showing made by this Province is small, and at once raises the question as to whether this crop is receiving from us the attention its importance warrants. In some districts its culture is unknown; in other sections, where at one time it constituted a considerable acreage of the land devoted to small grains, its growing has been almost wholly discon-

where land has been cropped with peas almost continuously. Where suitable rotations have been followed, and the likes and dislikes of the crop regarded, peas can still be profitably produced over a wide area in the Province.

Peas prefer a heavy clay or clay-loam soil. They will do better than the white-straw crops on spring-plowed land; but the practice of sowing on land plowed in the fall is to be commended, as it enables the grower to get the seed-bed into better condition and to get the crop in earlier. As peas will not thrive on cold, saturated



Students who worked in the Cereal Husbandry Department during the summer of 1909, with Professor L. S. Kliack, head of the Department, and his assistant, Mr. Cutler.

tinued. Thirty years ago large quantities of peas were grown on the Island of Montreal, while on Ile Perrot, and in the South-western counties bordering on the St. Lawrence, the pea crop was of great economic importance. To-day a field of peas of any considerable area in these sections is the exception.

In some quarters, this change has been attributed to the belief that the land is run out; in others, to the impression that the crop is more susceptible to mildews and the attacks of insects than formerly. A study of the situation would indicate that these objections are well founded only in the case

soils, surface drainage must be resorted to wherever the land is not tile-drained or sufficiently open to allow the water to percolate readily through the subsoil.

Unlike other small grains, the best results are obtained when peas are not sown too early in the spring. As a rule, they should not be seeded until the wheat, barley, and oats have been put in. Drilling is preferable to broadcasting, as less seed is required and a more uniform stand is secured. From two and a half to three bushels per acre is the amount generally sown, the rate depending upon the size of the seed.

Peas may be harvested with the ordinary hay rake, with the revolving horse rake, or, what is better, with the pea-harvester. The harvester is an inexpensive attachment to the ordinary mower and bunches the peas as cut. The separator can easily be adjusted for threshing the crop.

From the many varieties of field peas commonly grown, the Department of Cereal Husbandry chose six which gave promise of adapting themselves best to the conditions obtaining in Quebec. The average yield of these six varieties for the past four years has been 32.39 bushels of grain per acre. When it is remembered that the average yield for the Province in 1909 was 16.20 bushels per acre, some idea of the possibilities of increasing the returns from our pea-growing areas may be gained.

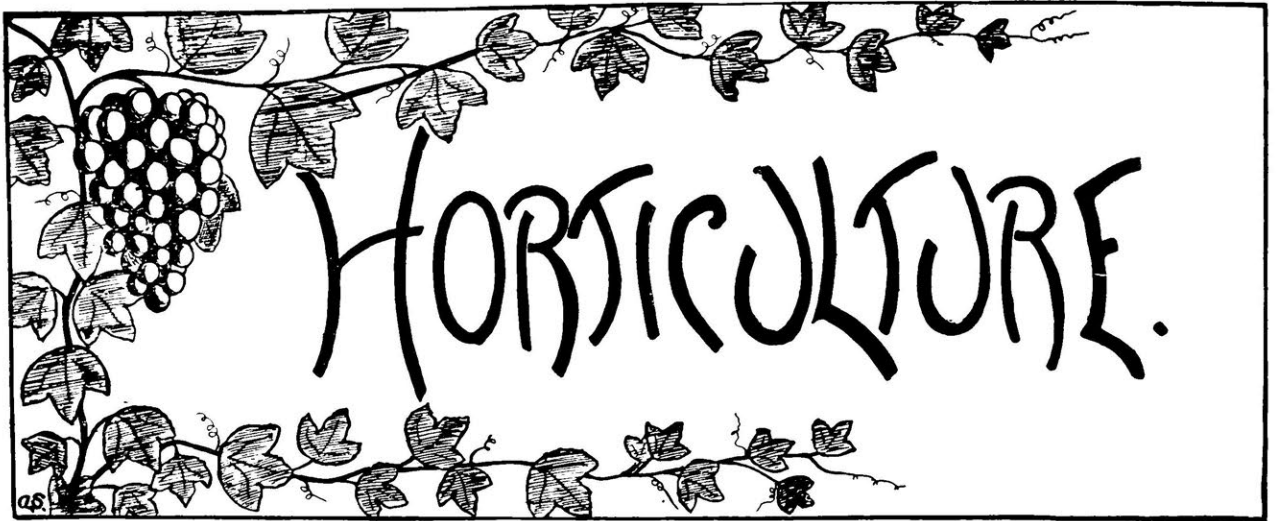
Careful work in the improvement of those varieties which have demonstrated their unusual fitness for our conditions is being conducted. From many thousands of individual plants, grown in our foundation beds, a few have been isolated which give promise of greater productiveness than any

varieties now being tested in our trial plots.

At the present time peas command a price on the market second only to wheat. As a grain for feeding to live stock they are particularly valuable because of their high protein content. The straw is relished by all classes of live stock, but is especially valuable for sheep.

Peas increase the nitrogen content of soils, improve the texture of heavy lands, and are rightly regarded as one of our most valuable soiling and green-manure crops. In the pea plant we have a combination of qualities not surpassed by any other small grain.

As dairying comes more and more into prominence in this Province, the price of feed stuffs, especially those suitable for milch cows and young stock, will become a problem of increasing importance. In the common field pea we have a plant which will not only enable us to cut down expensive feed bills, without materially depleting the fertility of our soils, but will, at the same time, make no unreasonable demands by way of special machinery or long experience on the part of the grower.



Horticultural Investigational Work.

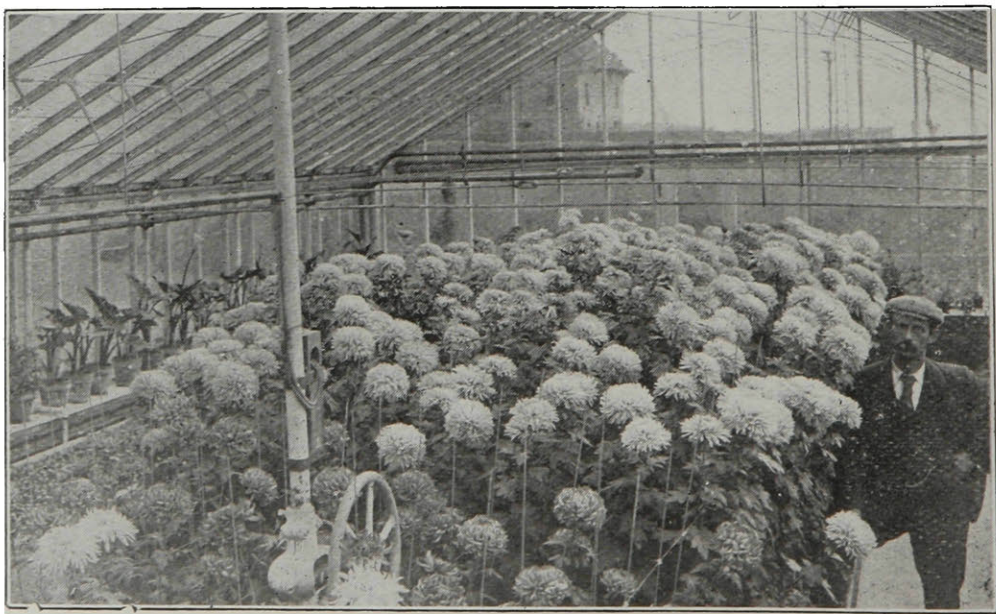
By W. S. BLAIR, Professor of Horticulture at Macdonald College.



NUMBER of experiments are being conducted with fruit, vegetable and flowering plants in the department of Horticulture at Macdonald College. These experiments have been undertaken to illustrate by demonstration and data secured the best varieties and most suitable methods to follow in the growing of such crops; thus assisting the grower and also

interesting the student in various phases of Horticulture.

Fifteen acres of apple orchard made up of commercial standard varieties have been planted for the purpose of making a study of the problems involved in the different methods of cultivation and fertilization. The aim of this experiment is to determine definitely the best practices in order to secure productive and long lived



CHRYSANTHEMUMS IN THE COLLEGE GREENHOUSES.

trees. It is the intention so to conduct the work that information as to the principles involved will be secured. The orchard itself will stand as a practical illustration demonstrating the practicability and advisability of following certain practices in the art of orcharding.

Studies will be made to find out the chemical and mechanical condition of the soil under different methods of treatment, especially with reference to moisture contents, for the purpose of determining the principal controlling factors in the development of trees

fertilizer applied, be secured. Plums originating from American species are represented by 20 varieties of about 200 trees. Varieties of plum crosses between the Western Sand cherry and other plums, originated by Prof. Hansen of South Dakota, are growing, and in some cases have fruited. These will not only prove of value in themselves but will be useful foundation stock for plant-breeding work. Plant-breeding work with this and other fruits will be carried on; it is hoped thereby to secure varieties more suitable under our extreme winter conditions and as



HORTICULTURE AT MACDONALD COLLEGE.

Harvesting Onions.

capable of withstanding severe winter conditions. This research work will not be confined to the field alone, for the chemist and biologist must assist in the final solution as to underlying principles.

Variety tests with apples are in progress, some five acres of land having been given over to this work. Three types of European plums are being grown under different methods of fertilization, to determine whether fruit-buds less susceptible to winter injury can, through the character of the

well to extend much farther north the successful growing of such fruit. A considerable area has been planted to pears, with the intention of making a study of conditions of environment most suitable for the development of wood tissue most resistant to pear blight.

Records have been kept of the yield of individual plants of gooseberries and currants for the past four years, and from the most productive and from those low in yield, plants will be developed for the purpose of finding out

whether such characters are constant and transmissible by vegetative propagation, or largely the result of environment. One hundred plants each of six varieties are being used for this work. Variety and cultural tests are being made with other small fruits as well.

Vegetable growing in its various phases is receiving attention in an experimental way. The best methods of growing and marketing are being considered with the object in view of finding out how better vegetables can be grown and disposed of in a more attractive and a fresher condition. The forcing of vegetables under glass has been quite extensive for the purpose of obtaining specific information, of assistance to those engaged in this work. The crops are all disposed of through the commission merchants, and in this way the business end of the experiment is worked out.

Experiments with various cut flower crops, such as carnations and violets, are in progress to determine the texture of soil, type of bench and time of benching most profitable. Crops, especially of legumes, are being grown on some of the greenhouse soil during the summer as catch crops which are later turned under, thus furnishing humus and fibre, and serving also as a rotation, to find out whether such a system will not do away with having to change so often the greenhouse soil. This, of course, can only be practised with a certain number of crops.

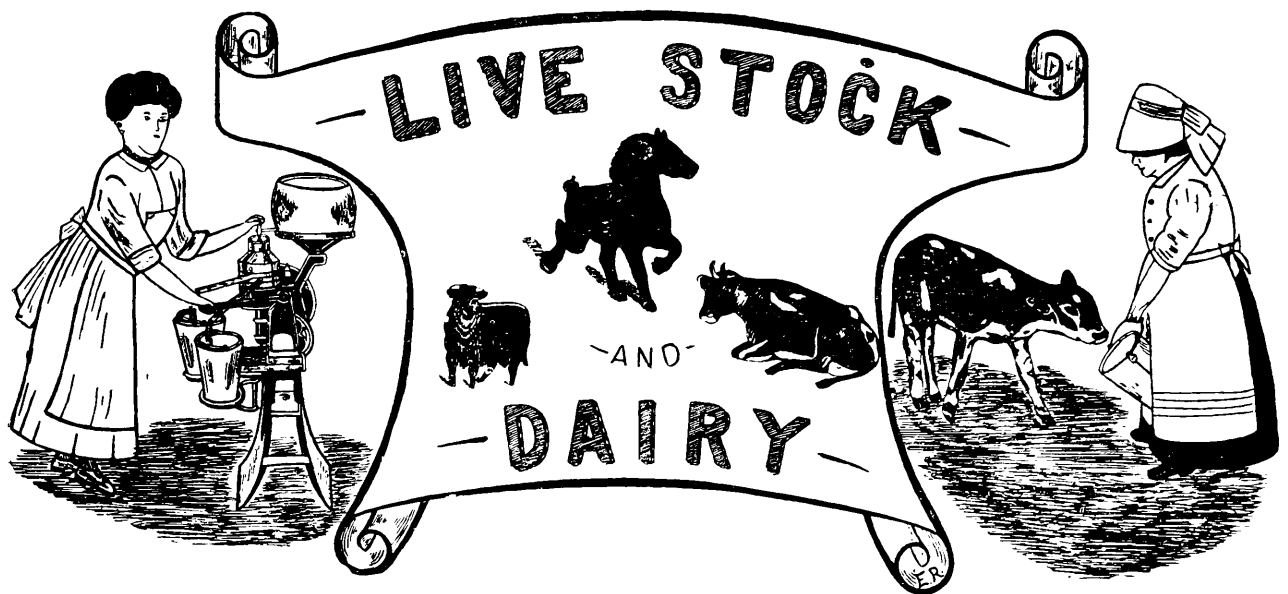
In nearly all experimental work it is necessary to continue the experiments along similar lines, with conditions as nearly as possible under control, for

several years before definite conclusions can be reached. Up to the present efforts have been largely directed toward the development of a fairly uniform soil, and securing material for experimental work, and it is hoped that in future more time can be given to this important phase of horticultural work. If definite results are to be obtained conditions must be controlled; haphazard methods only result in disappointment and waste of time. Close attention and much time must be given to get fully to the bottom of some of the problems mentioned, and the hope is that the department of Horticulture at Macdonald College will do more than simply dig on the surface.

* * *

[The foregoing article seeks to outline and discuss in a brief and readable manner some of the work and aims of the Horticultural Department of Macdonald College. Quebec, above all Provinces of the Dominion, receives an immense revenue from horticultural products and particularly, as the years go by, horticultural products grown for the "Export Trade."

Horticulture, in addition to its several main divisions, has others with, if possible, yet more delightfully pleasant features. Examples are Landscape Gardening, Forestry, Horticulture. It was scarcely within the scope of this article to discuss these divisions, although the College is seeking to work out problems in each one of these. They will, however, be dealt with at some future date and with particular emphasis laid on their commercial bearing in this Province.—EDITORS.]



The Origin of Ayrshires.



HE AYRSHIRE is probably the youngest of all dairy breeds, and though its origin seems veiled in obscurity there are many things that

confirm the theory that the native white cattle of Scotland are the foundation of the Ayrshire of modern times.

The County of Ayr, in which the breed of Ayrshire cattle originated, is situated in the South West of Scotland, with mountains on the east and the ocean on the west, having the form of a crescent and embracing the Firth of Clyde in its circle. The face of the country is hilly and rises from the level of the sea some 2000 feet to the top of the mountains on the east. The soil is strong and somewhat heavy, being clay or clay loam. The climate is moist, with a temperature ranging from between twenty-five degrees and sixty-five degrees and regulated by its proximity to the sea. There the Ayrshire still thrives in numberless herds, the pride of the Scotch breeder, by whom foundation stock is sent all over the world. Having been subjected to the rigorous

climatic conditions of Ayrshire for over a hundred years this breed has developed a vigor of constitution that can endure and easily adapt itself to the conditions of America.

The typical Ayrshire cow in general appearance is a handsome, alert, and sprightly looking animal, weighing, at maturity, about 1000 to 1100 pounds. In color she is brown and white, the proportions of each color varying according to the taste of the breeder. Being a tough hardy cow with a vigorous appetite she readily makes good use of the feed supplied her, and is capable of high production irrespective of the conditions to which she is subjected. The Ayrshire cow always remains the same persistent milker, and is always ready to transmit to her offspring those characteristics which enable her to excel as the best all-round dairy cow.

THE STANDING OF THE AYRSHIRE IN DAIRY TESTS.

Comparatively little work has been done in Scotland in the testing of dairy cows, but within the last few years a system of tests has been inaugurated by

the Highland and Agricultural Society on a thirty-six and forty weeks basis. Owing to the late date at which these tests were established, and to the fact that the breeders were slow to take advantage of them, little or no headway has been made.

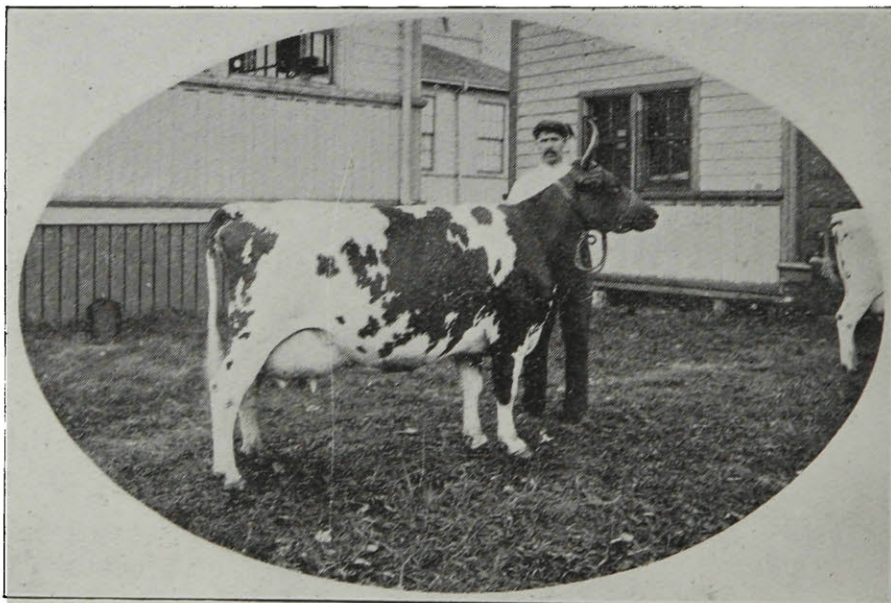
However, in Canada, dairy tests have been conducted for several years, and frequently the Ayrshires have topped the list. In the Pan-American test at Buffalo in 1901 the Ayrshires scored a close second to the Guernseys in butter production. For uniformity of weight

honors in the class for the best twelve dairy animals "of any breed".

With care and co-operation among the breeders, and with careful supervision and support from the Department of Agriculture and the Canadian Ayrshire Breeders' Association, much may yet be done in the improvement of the Ayrshire; the "top of the list" is not an impossible goal.

HOME DAIRYING AT THE COLLEGE.

In the Province of Quebec little or no attention has been paid to Home



ONE OF MR. NESS'S PRIZE-WINNING AYRSHIRES.

and amount of milk produced for food consumed they stood at the top.

The Canadian Ayrshire Breeders' Association has now formed a yearly "Record of Performance", which is supervised by the Dominion Department of Agriculture. Some of the Jersey cows entered for this Record of Performance Certificate have produced as high as 14,000 pounds of milk in a year.

At Exhibitions they frequently take leading honors. At the Alaska - Yukon-Pacific Exposition at Seattle, Wash., the Ayrshire carried off the champion

Dairying. The result therefore is that farmers and dairymen are inexpert in the care and handling of dairy products. At Macdonald College special attention has been given to instruction in the art of Home Dairying. In the first place, not only were the very best of buildings, the most modern equipment, and all essentials and apparatus provided, but above all a highly efficient and practical instructor has always been in charge of this important branch of the Dairy Industry. With the efficient instruction and the highly available course given to students, in a few years a marked

improvement will be evident in the Province.

The object of the College is to instruct the students how to manufacture and care for the products on their own farms, when they are needed, or when the factories are closed down in the winter season.

Considerable attention is given to the manufacture and marketing of high class butter; the packages are neatly and tastefully put up to suit every customer.

AN ENTERPRISING QUEBEC FARMER.

Some fourteen years ago Mr. R. R. Ness purchased the farm now known as the "Burnside Stock Farm." It is situated some forty miles to the southwest of Montreal in the fertile valley of the Chateauguay. The farm comprises about 190 acres of rich clay loam, all of which is under cultivation. Here will be seen one of the finest stock barns in the Dominion, fitted with all the



THE AYRSHIRE AT HOME

Scene in Ayrshire, Scotland.

Cheese making receives special attention. Some new varieties have been introduced with success; one worthy of special mention is the Macdonald College Cheese. The chief points in its favor are that it is of exceptionally good quality, and its process of manufacture economises labor. It can be readily disposed of at remunerative prices in the city of Montreal.

most modern conveniences, since in Mr. Ness's opinion "Time is money."

This young man has probably done more in the Live Stock circles of Quebec than any other man in the Province. However, this is not to say that every young man can do the same, because few men possess the requisite amount of energy, ambition, and good judgment. Any man, however, who is determined

to make a success of farming, and who will follow similar methods, can do equally well.

SECRETS OF SUCCESS.

Mr. Ness is modest; therefore it is not easy to ascertain from him the reasons of his success. The main product of the farm is milk. At present there are about 140 head, 75 of which are milking, turning out an average of 200 gallons per diem, and bringing in a monthly revenue greater than is made on an ordinary 100 acre farm in a year. For the month of December the cash returns were slightly over \$1,000. His aim is to have the cows freshen about the first of October, in order that he may catch every drop of dear milk; and by doing so, he makes about 25 per cent. more out of his cows than he otherwise would do.

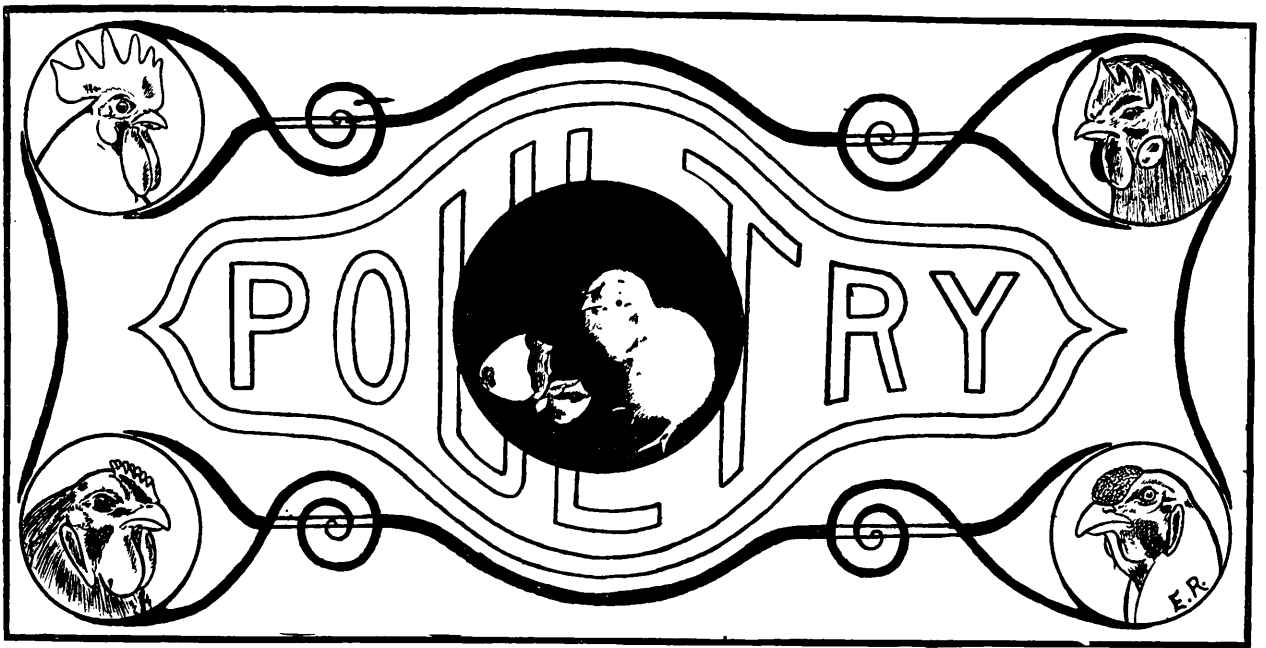
THE HERD.

A word or two about this herd may be of interest to our readers. About five or six years ago, he imported some high class animals from Scotland, and met with such success, that he now carries on an extensive importing business, from which he makes numerous yearly sales. During the past year

some 350 pure bred Ayrshires have been sold from this herd, and distributed all over the American Continent; many going to Alberta. Some of the prices reached the \$1,000 mark, this amount being paid for Netherhall Bonnie Jean. This animal was awarded the breed championship at the World's Fair. She is also a good producer, her record for 1908 being 11,033 lbs. of milk with 524 lbs. of butter; and at the time of exhibition she was milking 72 lbs. per diem. The Burnside herd at the late Seattle Exposition won ten out of a possible fifteen first prizes, three championships, four silver cups, three medals, and also the championship prize for the best twelve dairy cows of any breed.

This goes to show that farming will pay if conducted along proper lines. It proves there are as good opportunities on the farm as are offered by most other professions.

In the Province of Quebec to-day farmers like Mr. Ness are in a great minority, and if his example were followed by our young farmers, who no doubt could do nearly as well with a little care and enterprise, Quebec would soon occupy a leading place in the Agricultural circles of the Dominion.



How Macdonald College Aims to Help the Poultry Industry—The Work Carried On.

By F. C. ELFORD, Instructor in Poultry Department, Macdonald College.



ALL THE work has been with a view to assist the practical poultry keeper or farmer to make more money out of his poultry.

Hens, even in a cold climate like Quebec, can be induced to lay in winter. It is not necessary that the house in which these hens are housed should be artificially heated. The best results have been obtained from the simple colony houses one board thick, so constructed that any man handy with his hammer and saw can build one on his own farm.

It has been demonstrated that there is something in the selection of breeding stock for heavy winter production. By a persistent selection of the eggs from hens that have laid during the winter, the flock of hens are giving each year a better winter egg production. If farmers would pay a little attention to the selection of their

breeding stock, they would have pullets laying when the prices are high instead of the usual custom of having no eggs to sell until the prices have dropped. The American breeds have given the best all round returns, and for Quebec at least should prove the best breeds to keep.

The proper feeding of poultry has often been looked upon as being too complicated for the farmer to understand properly. The hens at the College have been fed once a day in the winter time, allowed to eat snow, and have given good satisfaction and returns. It has been shown here that the feeding problem is not nearly so complicated as some imagine. The proper feeding of poultry should not require more labor than the haphazard system usually adopted. The work accomplished goes to show that any farmer who will give the poultry department the same attention that

he gives other departments of his farm, may have good returns from his hens without materially increasing the labor. By the moving of the colony houses on to the fields it has been shown that hens so kept pick up a good deal of feed that on the ordinary farm might go to waste. For two years practically nothing but frozen wheat was fed to laying stock and rearing chicks during the summer months. This answered as well as high priced wheat,

The subject of artificial incubation being a live one, a few experiments have been conducted along this line. So much has been said to complicate the hatching by artificial means, in the poultry papers, that farmers might well be discouraged with artificial incubation. Our experiments have gone to show that it is better for an inexperienced man to run the machine exactly as the directions given by the manufacturer state. No better results



THE POULTRY DEPARTMENT, MACDONALD COLLEGE.

A View of the Colony Houses.

and it was found that when fed in hoppers to growing chicks they grew well, and required less labor than with any other system of feeding. The crate feeding of cockerels has shown that much money has been lost to producers in this Province. Farmers usually sell birds unfattened, thereby getting a lower price and less returns. Crate-feeding finishes a cockerel in such a way as to be much more profitable to both the producer and the consumer.

have been obtained by the introduction of any features which would tend to complicate matters. A test of the different makes of machines has not proved that any one machine is a great deal better than any other. It has been shown most conclusively, however, that a room must be well ventilated in order to get a good hatch of strong chicks. Numerous other experiments with artificial incubation are being carried out, and in all probability another year will give us very valuable data.

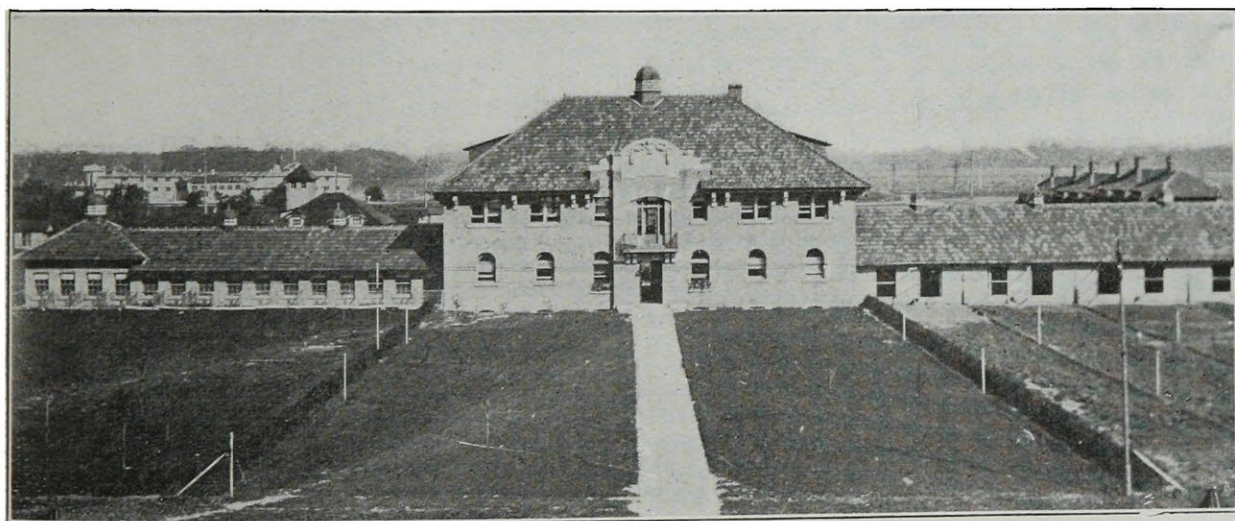
Trap-nests are used in the endeavor to make by breeding from selected birds a strain of fowl that will give a better average of eggs, especially during the winter season. For this purpose trap nests have been used with all the hens, and eggs only from the best layers have been used for hatching. This gradually weeds out the drones and the general average is brought up, not by the production of phenomenal layers but by the destruction of the poor layers. Work has been carried far enough to see that there is yet much to be accomplished. It has been shewn, however, that all good pro-

male represents a larger proportion, the importance of this work can be seen.

The investigations last year with incubated chicks showed that an epidemic which was prevalent throughout Eastern Ontario and Quebec was caused by mouldy feed and musty litter. The College is indebted to Dr. Cushing of Montreal for the expert work in this connection.

THE MAGNIFICENT EQUIPMENT OF THE DEPARTMENT.

The administrative building contains offices, incubator rooms, packing



THE POULTRY BUILDING, MACDONALD COLLEGE.

ducers will not beget good producers, and this year pedigree work is being carried out; that is, a few of the best hens of each breed are selected and mated with males that come from good producers, and the offspring from these matings are kept track of. It is hoped that this will develop a strain of prepotent breeders.

From this stock, breeding stock and eggs are sold to the farmers at a nominal price, very often at a price from one-quarter to one-tenth of the real value. When it is known that the male is one half the flock, and that a prepotent

and egg rooms, and wash rooms on the ground floor, with lecture, reading, and record rooms on the first floor. Most of the up - to - date incubators are used for practical and demonstration purposes. A well equipped brooder house opens off the incubator rooms. This house is equipped with a hot water open system. A separate building is used for storage and crate-feeding purposes. In the building are placed a 15 h.p. electric motor, grinder, cutter, bone mill, etc.

Two general systems of poultry husbandry are demonstrated on the plant.

The **Intensive** plan is carried out in the continuous house, to which are attached permanent yards; the **Extensive** plan prevails throughout the general plant, where the laying hens are housed in portable colony houses.

The plant occupies about 15 acres divided into two- or four- acre yards. Into each of these yards is put one breed of hens, sheltered in small colony houses, holding from 25 to 30 birds. These houses are placed throughout the field during the summer. In the winter they are drawn up near the feed room for convenience and protection. One or more of these fields may be cultivated and sown to grain each year.

About 800 hens are kept, made up of Barred Plymouth Rocks, White Wyandottes, Rhode Island Reds and White Leghorns.

The same two general systems are practised in the brooder and rearing operations. The brooder house above referred to demonstrates to a limited degree the intensive plan, while brooder colony houses illustrate the extensive method.

MONEY IN POULTRY.

Farmers do not keep sufficient poultry. It is estimated that there are about 25 million head of poultry in Canada. Divided up among all the farms this would mean about 35 head per farm. If each farmer who farmed fifty acres or more would keep 100 hens, and the farmer who had fifty acres or less kept 50 hens, we would have a total of fifty million head of poultry in Canada to-day.

Take the 25 millions that we have, and grant that 20 millions are laying hens. If, through poultry instruction, the

farmer can be induced to make the selections that will result in one dozen eggs per year more from each hen, note what the result will be:—20 million dozen at 20c. is \$4,000,000. If the farmer could be shown that by more care in handling his eggs each dozen would bring but one cent more, the total increased value to the nation would be:—20 million hens—7 dozen each—140 million dozens—one cent extra per dozen would mean \$1,400,000.

It is doubtful if any instruction gives a better national return than that given in poultry keeping.

In every case of eggs sold there is an average of two dozen eggs lost through carelessness or ignorance.

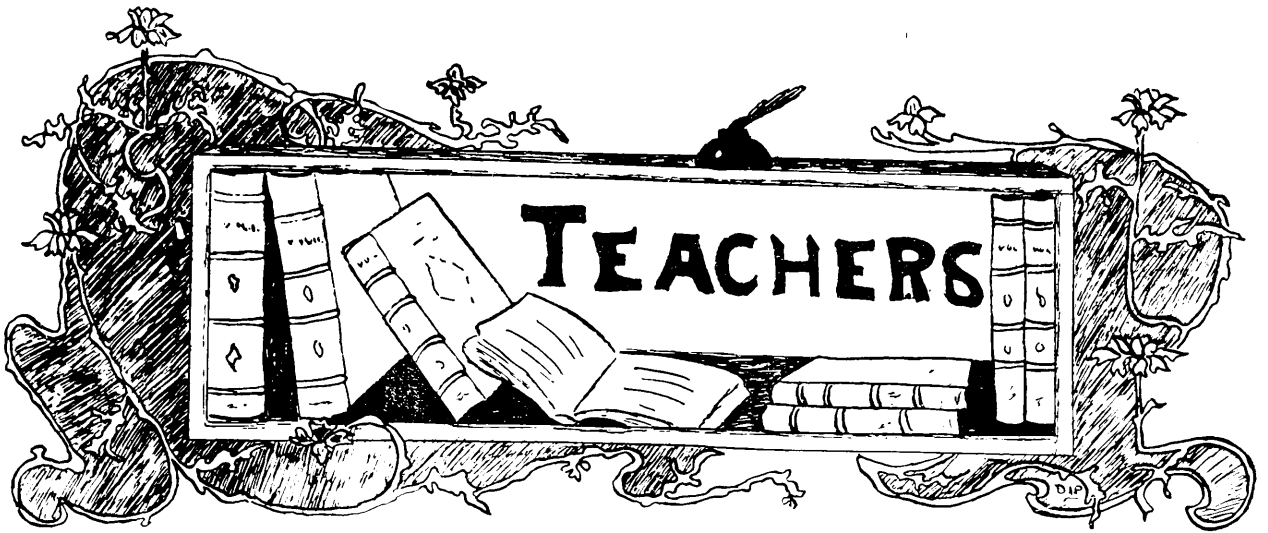
It is estimated that every man, woman, and child in Canada consumes an average of a case of 30 dozen eggs each year.

It is computed that the hen of the United States produced in three months last year, and had a week to spare, wealth equal to all the capital of all the banks that clear through the New York Clearing House.

It is estimated that the hen can in 60 days produce value, equal to the total production of all the gold mines in the United States.

If the product of the hen was devoted to the paying off of the National Debt of the United States, this could be accomplished in 1 year and 10 months.

If the eggs laid last year by the United States hen were loaded, 400 cases in a 36 foot car, the line of cars would reach a distance equal to that from Montreal to Nelson, B.C., 2,653 miles.



The School for Teachers.

By J. A. DALE, M.A., Professor of Education in McGill University.

IT is not an easy matter to describe the School for Teachers when many of my readers know nearly everything about it, and some know very little. The students know best the details of their own life, which looks to us so varied and pleasant that even the work it involves cannot cloud it. The social side of life at Macdonald will find bright record in the pages of the *Magazine*, which is itself a high tribute to the public spirit and common friendliness of the student body. The School is then a community, and part of a larger community; with a life of its own, complete within its limits. This is the great advantage of the residential system. Partly from my own experience, and partly from what I see and feel at Macdonald, I strongly hold that this system gives the student a good time in every sense—more fun, more opportunities of happy and healthy activity, better chance of all-round development, than does the boarding out system.

The School is the only training College for Protestant Teachers of the Element-

ary and Model Grades in the Province; it, therefore, practically controls the Protestant training in the Province, which is a great responsibility and a great opportunity. This used to be done by the old McGill Normal School, where Dr. Robins did splendid work for so many years. On the foundation of Macdonald College, Sir William, desiring to associate the training of the teachers of the Province with that of its farmers and homemakers, undertook to make and maintain a home for the School at his own expense. McGill University, therefore, becoming by the incorporation of Macdonald responsible for the training of teachers required by law, undertook to prepare students for the Elementary and Model diplomas at Macdonald, and provide for the First Class Academy diplomas in connection with the Arts degree at McGill.

The work done in the School may be described under three headings: academic, theoretical, and practical. The academic training aims first at giving the teacher complete mastery of the subjects she will have to teach, and second at giving her a wider acquaintance with

the subject and its connections, as well as some knowledge of great issues and principles. In a word it tries, under the rigid limitations of time-table, to give some little background of liberal education. For we believe that the best teacher is one who has caught with enthusiasm the real bearing of her subject, and who has enriched her own life and thought by enjoyment of the higher pleasures of knowledge, the key to which she hopes to give her pupils. But to be a good

who is peculiarly able to do this: he makes his theory rise out of concrete examples, and express itself in action. The practice work is largely provided by the Day School on the Campus. Before the arrival of the College this had 18 children, and one teacher; the new fine building houses nearly 100 children and four teachers. The Day School is being continually made more useful for the purposes of training; but it is felt that some experience of town schools and of

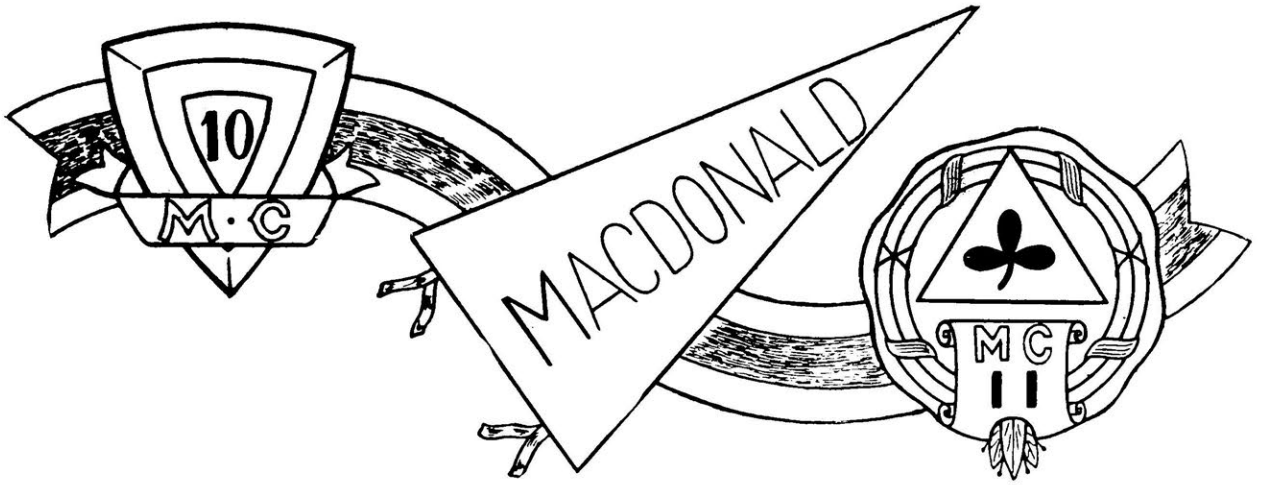


IN THE MANUAL TRAINING WORKSHOP

Teachers at Work.

teacher she must know how to make the best use of time and effort, or she may be enthusiastic and yet a failure; hence the need of professional training-method, in theory and practice. The theory and practice are woven together as closely as possible, for we believe with Henry Sidgwick that sound practice is sound theory unconscious of itself, and sound theory is sound practice conscious of itself. In Dr. Sinclair we have a teacher

the handling of large classes is necessary. In order to provide this, the Protestant Commissioners of the City of Montreal have given generous opportunities, and the teachers themselves have given our students every welcome and encouragement. Dr. Sinclair and Superintendent Silver have organised this work skilfully, assigning the hours to be spent by each student in a separate classroom in charge of the class teacher, the common centre



Model Teachers, Class of 1910 The year Executive is as follows:—President Hope Black; Vice-President, Agnes Clouston; Secretary, Zelia Honey; Treasurer, J. Aird. Members of Committee, E. Foster, B. Caldwell, Robert Kennedy.

being the Belmont St. School under the care of Principal Campbell. Such in briefest outline is the School for Teachers and its work. Regarded simply as a School for Teachers, it is certainly hampered by the fact that teaching is not seriously regarded as a profession by those who pay the wages. It is inevitable that the bulk of our students should look on teaching as a temporary employment. I remember a class nearly fainting when Dr. Sinclair expressed the hope they might teach for forty years! The School will surely develop on the professional side. If only all the teachers of the Province could spend two years at Macdonald, the gain all round would be great, but at the present rate of salaries this can hardly be hoped for. At the same time the School is doing more than training teachers; it is training for the whole of life, which is better still.

That is why I feel there is something in the School for Teachers greater than any of its achievements. It benefits by the dignity and scale of its surroundings, by the thought of its great hearted founder. It benefits by the neighborliness of the other Schools, by the sense of masterly efficiency and scientific commonsense in their practical departments.

Even if the students get no definite knowledge of agriculture, horticulture, or domestic economy, they must gain impressions of the value of orderliness, organisation, foresight—in a word of business methods—whether in the farm or in the home.

But its greatest benefit is one not fully realized till student days are over, the wholesome sense of community. This “chip of Old McGill” is living at least one part of the meaning of the great word university.

BELLS.

Bells that in our childish ears
 Rang happy-clear,
 Mellow through a mist of tears
 Ring dimly-dear.

Although to us no angels sing
 Unfaltering news of Christ the king,
 And no compelling star divine
 Lead us to the authentic shrine—
 The lilies of the mother-maid
 Yet sweet within our thresholds shine;
 And warm about our heart strings laid,
 The fingers of the Child-God twine.

Bells that in our childish ears
 Rang happy clear,
 Mellowed by the human years
 Ring deeply dear.

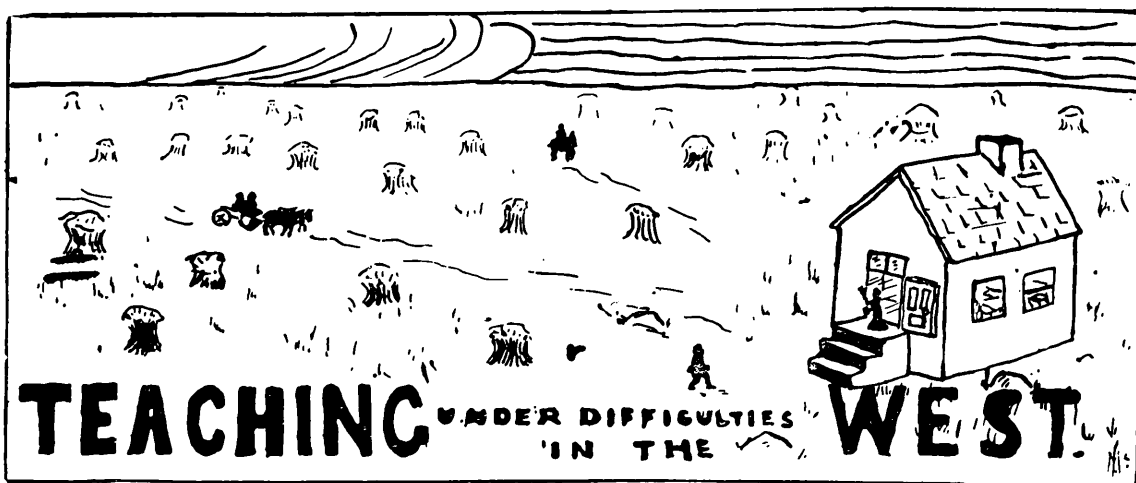
J. A. D.



THE WOMEN'S RESIDENCE, MACDONALD COLLEGE.



Elementary Teachers, Class of 1911. The Executive for the year 1909-10 is as follows:—President, Jean K. Hogg; Vice-President, Dorothy I. Petts; Secretary, Agnes McCredie; Treasurer, Laura Johnson. Committee:—Dorothy Hatton, Eliza Cowan, Mable Mills, Hazel Saunders.



To a good many people, teaching in the Western rural districts is synonymous with discomfort and difficulties. And, naturally, there are many things that are hard to put up with, but in most cases conditions might be worse than they are. On the other hand there is so much that is interesting and beautiful, that I am sure no one will regret a year spent on the prairie.

If a person is inclined to be lonesome, the prairie will greatly increase that feeling for a time. Everything is so vast, and the unending level stretch, with its tiny far-scattered houses, seems so monotonous and desolate. Not a tree nor a hill in sight; and the sky like a huge blue bowl seems fairly to hem one in. But soon, even the most home-sick fall under the charm of this wonderfully fascinating country.

The first problem of a newly arrived teacher is to find a suitable boarding place. Often this is quite a task, and she may have to change places several times during the first week. And at the end of her quest she may be quite a distance from the school. Distance does not lend much enchantment in the winter either.

The objections to the various houses are many, and range from sour bread

and bad butter to general filth and over-crowdedness. In one house where the teacher was supposed to board there were two rooms. Upstairs eight children slept. One corner of the room was screened off by a soiled curtain and behind this was the teacher's bed! The one small window was never opened. Downstairs the father, mother and youngest child slept. This was the dining-room, kitchen, pantry and general living-room. The whole house was so dirty that I doubt whether tons of Old Dutch would make much impression.

In the foreign settlements it is much worse. A small corner, screened off from the one-roomed house, is all that is reserved for the teacher. Outside the screen, on a straw spread on the sodded floor sleeps the whole family, men, women and children. The scene is fairly indescribable. Usually, if the teacher has nerve, she elects to sleep in the granary, but if not she departs at once. The food in such a place is usually unpalatable, and it does not make a dish more appetising to know that it has been stirred with the same stick that has been used to beat the animals.

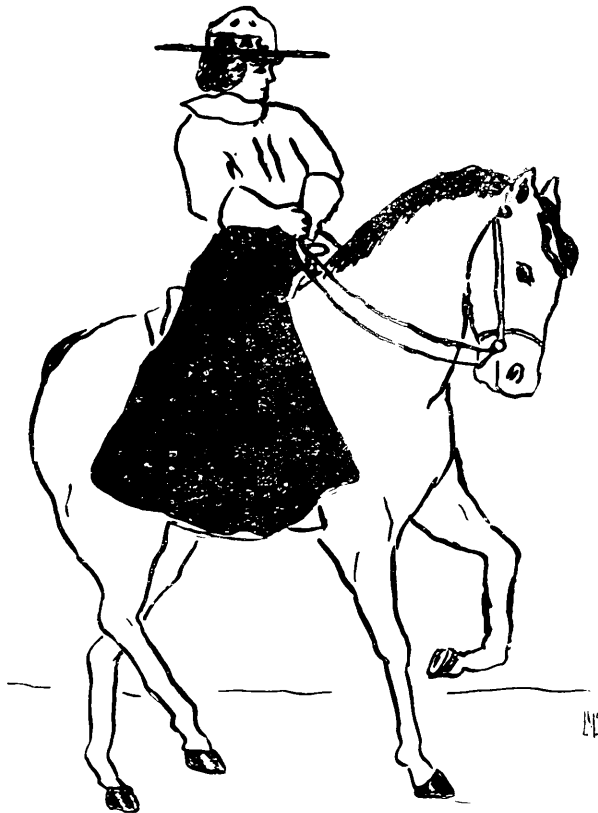
The school work is interesting and enjoyable. It differs somewhat from

that of Quebec, but the Department of Education gives full information about the subject on application. Nature Study is provided for in all schools. Every school is also supposed to possess a library of interesting and instructive books.

The children are of different nationalities and as a rule are very backward because of their irregular attendance. The older children can only

and eight years managing a large horse with perfect ease and familiarity.

The winter is the dreaded season of the year. The cold is so intense and the wind so strong that it makes the drive to and from the school house rather disagreeable. With the thermometer from twenty degrees below to forty-seven below it is almost impossible to keep the school-house warm. When a blizzard comes up during



On the road to school

attend in the winter because there is so much to do during the other seasons. The younger ones do not attend in the winter because of the severity of the weather. Most of the scholars are very anxious to learn. In age, they range from five years to seventeen and even older, from wee tots to big, broad-shouldered young fellows who are much taller than the teacher. The children all ride or drive to school, and it is amusing to see youngsters of seven

school hours both teacher and children have a hard time to get home. The wind, with its thousand mile sweep, whirls the light snow until it is only possible to see about twenty feet ahead, and the flying snow cuts the face like needles. But even in the winter the sun shines nearly every day.

The rest of the year is grand,—long sunny days and clear starry nights. The stars seem nearer to us here than they do in the East.

They bring to mind those lines of Longfellow's:

"Silently, one by one, in the infinite meadows of Heaven,

Blossom the lovely stars, the forget-me-nots of the angels."

The prairies abound in wild ducks, geese, grouse, prairie chickens, badgers and gophers. Around the rivers are found beaver, musk-rat and mink. Occasionally the mournful howling of a coyote may be heard. All these furnish abundant material for Nature Study. In the spring and summer the

The weekly or bi-weekly visit to the post-office is a great boon. Church-going is also a luxury if the town is any distance away unless a short service is held in the school-house. This ought to be a warning to the girls who "skip" Religious Instruction and Assembly.

Living among farmers as a teacher does, it is impossible not to become interested in farming. Frequently it happens that she becomes so much interested in the farmer himself, that she leaves the teaching profession and



The scholars range from 5 years to 17 years and even older!

prairies are gorgeous with myriads of wild flowers, so fragrant and beautiful that they make a scene of exquisite loveliness. Riding, driving and shooting are the most general means of enjoyment. A good gallop across the breezy prairie is ideal preparation for the day. The farm houses are so far apart that it is necessary to ride or drive if one desires to call upon a neighbor. Except the children and the people with whom she boards the teacher does not have much company.

employs her talents in a different sphere. That is one reason why there is always a great demand for teachers in the West.

Everything considered, a year on the prairie is a delightful experience. One sees every phase of Western life in a way that could not be seen otherwise. In the near future I hope there will be many Macdonald girls who will respond to the call of the West.

J. Mc.

Work in the Practice School.



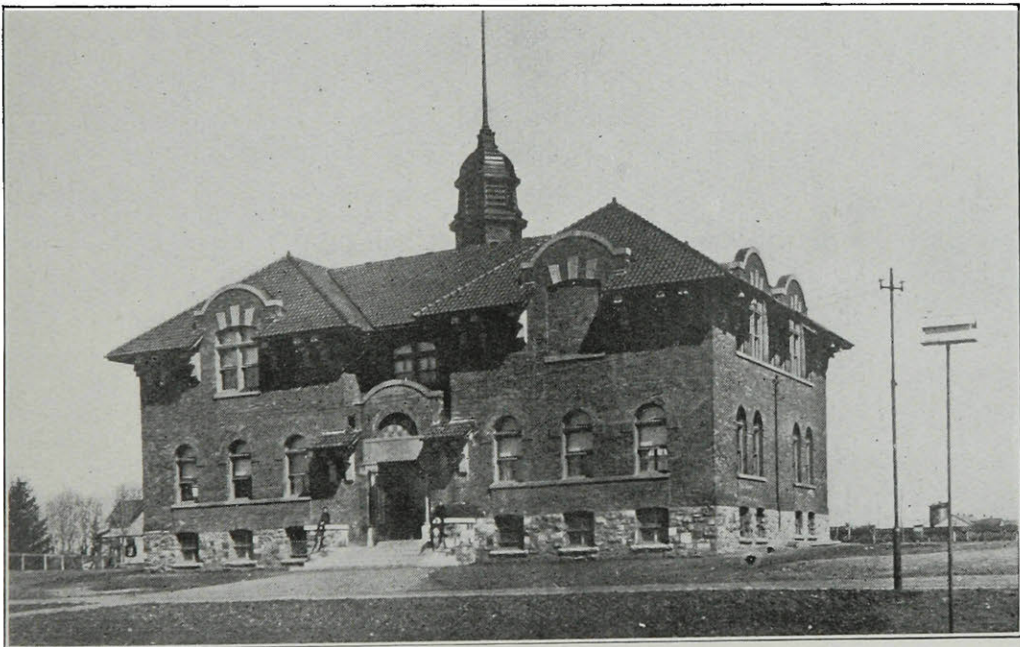
ONLY we teachers know with what fear and trembling we wend our way to the bulletin board to learn our fate—for better or for worse.

Then, some students are in ecstasies of delight at the thought of teaching a spelling, reading, or writing lesson, others moaning over a worse than awful French lesson.

Many anxious moments and hours of deep thinking are spent on preparing these lessons, for we have not only to

noting our plan, discipline methods, etc. At Macdonald College no fortunate teacher in training can escape from such experiences.

But this is not all. We must think of the advantages and pleasure we derive from the Day School work. One cannot teach children without learning something about them; their ways, games, personality, etc. In the Day School the ages of the pupils vary from 5 to 16 years, which affords us a wide scope in child study. These lessons help us to



THE PRACTICE SCHOOL MACDONALD COLLEGE.

teach the children, but teach under criticism. Probably the latter will explain our rather hilarious actions on receiving our fate. Each student takes a class and teaches for twenty minutes (which to the teacher, really seems like two hours), while half a dozen girls and two or three members of the Staff observe. The feeling is one which can hardly be expressed, when around us we see these eight or nine noted personages scribbling page upon page,

take our class with confidence and to help the children to find the way toward getting the best out of life. They give us experience for the profession which we are preparing to follow and help us in very many ways to be better teachers.

And as in so many others of life's experiences, we shall look back in after years with a sense of pleasure to these ordeals, to which now we perhaps look forward with a little sinking of heart.

B. B. F.

What College Life Does For a Girl.



THAT girl, after spending two years, or one at least, of her life at college, does not feel a different being the day she leaves from what she was the day on which she entered the halls of her Alma Mater?

This poor little freshette, having travelled a great many miles alone, and all the while worrying and wondering just what kind of a place her home for the next year or two is like, eventually arrives at her destination amid a throng of trunks and luggage, with here and there a lonely individual like herself. Oh! that horribly awkward, lonely feeling! Why can she not feel at her ease instead of imagining that every girl in sight is staring at her and sizing her up. Those first few days seem too indelibly impressed on one's memory ever to be forgotten.

However, for others this state of affairs seems to be just reversed. Another girl comes to college fairly brimming over with excitement and visions of midnight feeds and escapades. But all too soon she realizes that College was not meant to be all play and no work. So she in her turn benefits from her College life, as well as her shyer and less enthusiastic sister. We would naturally ask, "In what way will College life help these two girls?" Well, to make a long story short, the first girl will be "drawn out of her shell," so to speak, while the girl who scorns rules will learn to appreciate the guidance tendered her by some one

more capable and experienced than herself.

At first we are inclined to chafe under the rules and ordinances which are a part of College life. However, in time we learn to appreciate them most thoroughly, and even if they have incited us to numerous pillow-fights and sleepless nights, we know that they must exist, and immediately we mend our ways (for the time being at least). Strange as it may seem, these sleepless nights do not in any way help to lessen that surplus *avoir-dupois*, which so vexatiously accumulates during our sojourn at Macdonald. For if Macdonald does nothing else, it takes good care of the health and appetites of its inmates.

And what long-cherished friendships we have made! For has not Macdonald been the means of bringing together friends, with whom, at the close of the session, we shall honestly hate to part? How proud we shall be in after years, when "Our Girls" have made their mark in the world, to be able to say, "Why, she was an old College chum of mine." Naturally each one of us has aimed to do her own share toward making this old world of ours a more habitable place, so we shall all have cause to be proud of one another in the days to come.

Now let us stop for a moment to consider the girls as individuals. Where can a girl find more scope to develop her individuality than at college? We honor and respect the girl who can think and act for herself and



The Macdonald School marm
and



The Other Kind

secretly, if not outwardly, we try to follow her example and not merely to join in with the majority. By degrees we find that our view of the matter counts for just as much as the next person's, and from imagining ourselves utterly useless beings, we may develop into leaders of our fellows.

Again, the social side of one's character is not by any means forgotten. Even the poor ridiculed and laughed-at

receptions do their share toward making us more sociable individuals. Where could be found a happier or more contented assemblage of people than at a Macdonald Bal Masqué?

Why! the atmosphere of college life fairly breathes good comradeship and devotion toward our fellow beings and what in any girl's life could be more desired?

F. L. P

COELUM NON ANIMUM.

Not this our fate, till summer sun
 To mourn the dead, the unborn
 flowers;
 And leafless wait, when winter's done,
 The mercy of the showers—
 For sunny memories melt our snows,
 Fling sparkling far the rime,
 Unbud the dearest blooms of time,
 As tardy June the rose.

J. A. D.



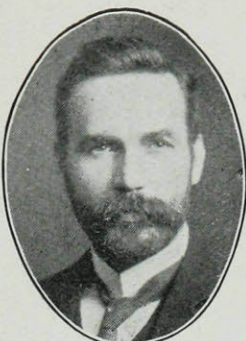
MISS
M. TORRANCE.



MISS G. BAGNALL.



MISS JANET
MACNAUGHTON N.D.D.



H. F.
ARMSTRONG.



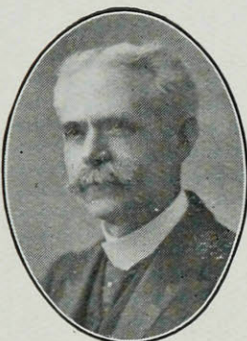
H. DASEN.



MISS
L. B. ROBINS, B. A.



J. A. DALE, M.A.



S. B. SINCLAIR,
M.A., Ph.D.



A. W. KNEELAND,
M.A., B.C.L.



Mme SOPHIE CORNU.



MISS
R. H. O'CONNOR.



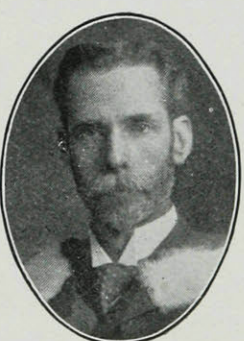
MISS
J. T. GREIG.



MISS
M. I. PEEBLES.



MISS M. MACNAUGHTON,
B.A.



W. H. SMITH.



MISS M. KENNEDY.



MISS K. A. FISHER,



MISS J. RUSSELL.

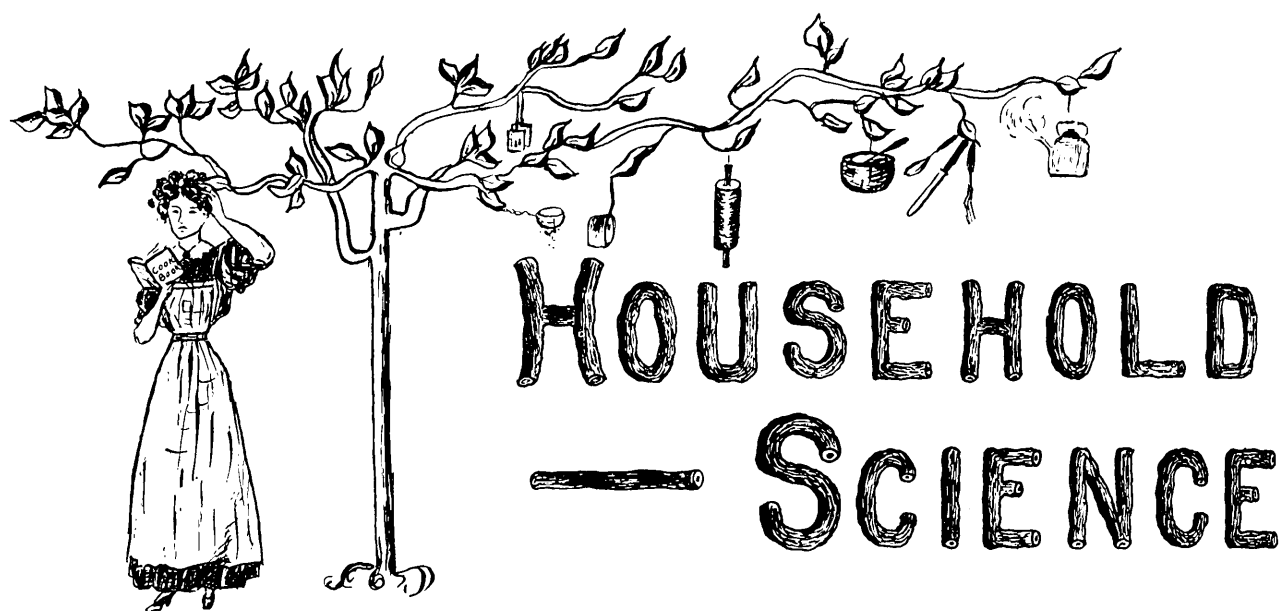


MRS. T. T. RUTTER.



MISS E. H. BIGELOW.

OFFICERS OF INSTRUCTION. SCHOOL FOR TEACHERS AND SCHOOL OF HOUSEHOLD SCIENCE



The School of Household Science.

Its Aim, Scope, and Hope.

By ANNIE B. JUNIPER, Dean of the School of Household Science, Macdonald College.

THE CHIEF OBJECT and aim of this School is to train girls to become efficient home-makers. To this end the three Courses offered have been planned, namely, the one year Home-maker's Course, the Short Courses of three months for those who cannot spare longer, and the two years' Professional Housekeeper's Course, for those who by their knowledge of home-making desire to earn a living. These, after taking the one year Home-maker's Course, are to study the management needed for numbers in larger institutions.

The public is beginning to realise that the home has not yet been developed as it might be, and that it has not yet received the earnest attention and study which any other successful business enterprise has. And immediately one questions "why?" The answer is not far to seek. The province of home-making has been viewed in a

wrong light. Take any helpful line of worker, from the carpenter to the farmer or doctor. Each has a varying apprenticeship to serve, a time in which to study his chosen vocation in all its aspects. The practical work and the science which underlies it he has to master. It is only during the last few decades that it has dawned on mankind, that home-making, the highest of all woman's vocations, needs careful preparation, if the home is to be happy and the nation strong. As a paper recently put it, "The standards and knowledge among women responsible for homes are deficient, and the conditions are extremely hard." And, sad to relate, it is the women themselves who have been blind to the facts and considered themselves exempt from the need of training which men conceive it necessary for themselves, and which their less fortunate sisters who have to go out into the world are obliged to have before they can earn their living.



Household Science, Class of 1910. The Year Executive is as follows:—President, M. I. Innes;
Vice-President, Daisy Harrison; Secretary-Treasurer, Margaret Drummond.
Committee:—Margaret A. Stewart, Irene M. Clerk.

Let us consider what Home-making includes. It embraces a knowledge of English, Cookery, Laundry, Needle-work, of what constitutes a healthy, comfortable, and beautiful home, and of how to keep it so, Household handicraft or the small repairs of a home, Personal and Household Accounts, Hygiene, Sanitation, Physiology, the care and training of children, Home Nursing, with Chemistry, Physics, and Bacteriology, the Sciences which ex-

take the trouble to teach her daughters conscientiously? Is it not more frequently the case that a girl picks up what she can according to inclination? Many a mother has neither time nor patience to instruct her children, and few are born teachers. A mother's own very perfection in the art of cooking, for example, may prevent her from discerning the difficulties likely to occur to a girl. There is too, the possibility that the mother may become



A LABORATORY IN THE HOUSEHOLD SCIENCE DEPARTMENT.

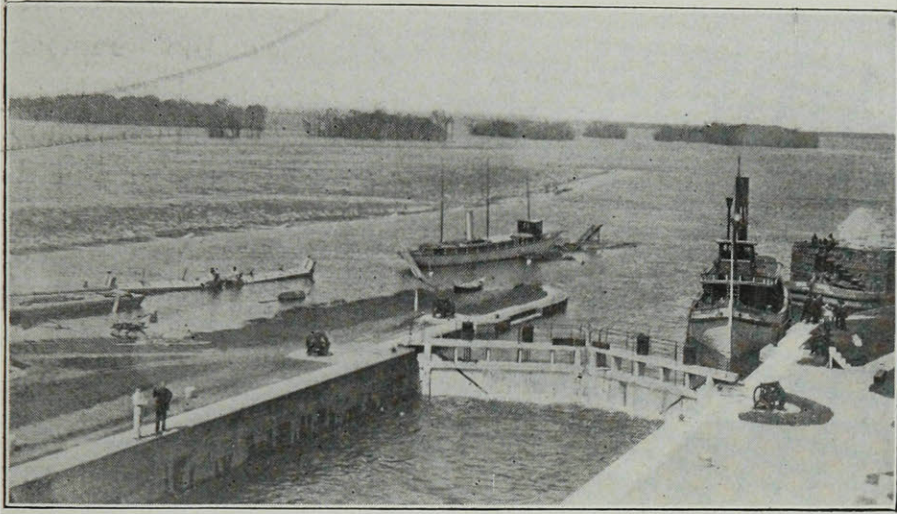
One of the Classes at Work—Practice Cookery.

plain these studies; whilst for those in country districts must be added Home Gardening, Poultry and Dairying. And the average girl is supposed to know all these, more or less by instinct, or at best after a few months with her mother.

It may be argued that a mother can teach a child all that she needs to know of these subjects. That may be true, but does the average woman

ill. Who is then to take her place? The average untrained girl does not find it easy at a moment's notice to cook, not cake and candy simply, but good nourishing meals for a family, and perhaps make poultices and tempting dishes for the invalid.

One of the greatest English writers on Agricultural questions, Mr. James Long, in his latest book "The Coming Englishman" says:—"Man's work is



THE LOCKS, STE. ANNE DE BELLEVUE.



Household Science Class of 1911. President, Miss J. C. Van Duyn; Vice-President, M. Shepherd; Secretary, L. Mackay; Treasurer, D. Brown; Committee, D. Bryson, B. Read, G. McLaren, E. Pipes, H. Bremner, E. Sellan, F. Scarff, H. Christie, M. Rutherford.

to help his fellow man to live, where there is misery and suffering, disease and death—to bring love and life—but we must create a new race of mothers.”

We would go further and say, let us by all means help the future mothers, but let us also, if they will accept it, give help to the mothers of to-day. Whilst there are many beautiful homes and many excellent housewives, there are also those who learn by bitter experience which they are often too proud to let any one guess. We want the young wives of the future to benefit by all the experience of the first class housewives of many years' standing. A Household Science centre should be a sort of bureau for collecting and distributing information bearing on the home. Home-making no longer must be regarded as work which any amateur can do. Farming carried on in an amateur fashion for so many centuries has advanced by leaps and bounds, since it has become a Science, to which men devote their lives.

Agricultural Colleges, Farmers' Institutes, and trained men everywhere are studying, investigating, and remedying the difficulties that the farmer unaided was often unable to conquer. Men meet together to discuss their failures, successes, and to compare results. That is what women need—a business-like co-operation.

Women's Institutes might meet this need, and could be organised from such a centre as this in the Province of

Quebec. These are local women's clubs where mothers meet to discuss their difficulties, discoveries and successes. Papers on subjects of interest to all are read and followed by discussion. These papers are often by members themselves but sometimes by outsiders. And here the Staff of the Household Science School might assist by giving lectures and demonstrations, and also by collecting and distributing literature for local members responsible for articles on different topics. This would keep the Household Science Department in close touch with the mothers, which is essential to successful work, and at the Farmers' annual meetings, similar gatherings could be arranged for the wives. Students who have spent some months at Macdonald should become useful active members of such Institutes in their own community.

Knowledge means strength. A woman thoroughly versed in the work she carries on is well poised, has greater power, and is far more efficient in everything she takes up, and consequently has more time to cultivate other sides of her nature. With this end in view we try to show our students that a well planned and conveniently arranged artistic home with every labor saving appliance may become a joy to the happy housewife, whilst it does not sap the vitality and strength which she needs for other purposes. A happy educated mother means a happy healthy home.

Water Supply in Country Homes

By C. J. LYNDE, Ph.D., Professor of Physics, Macdonald College.



ANY farmers have an excellent water supply system in their homes, and many others would install one if they knew better how to go about it and what the probable cost would be.

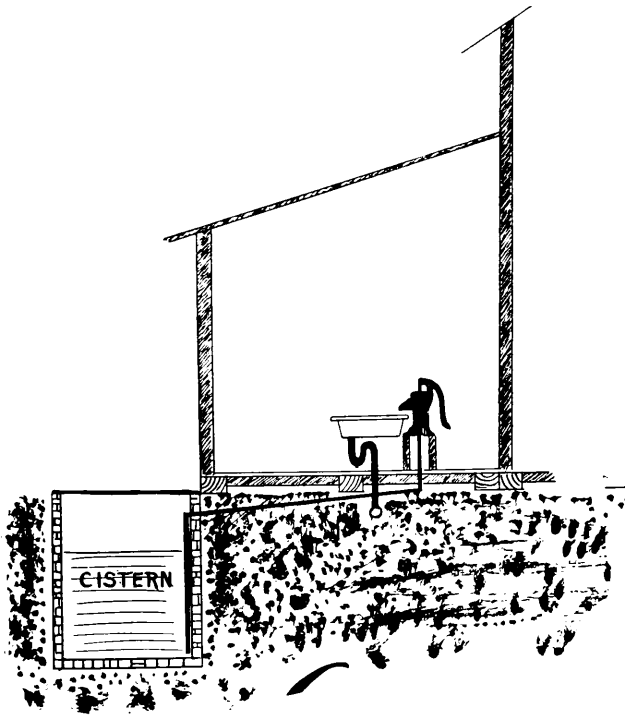


Fig. 1

There is an impression abroad that nothing can be done in this direction without spending a great deal of money. This, however, is not the case, as many of the conveniences of an abundant supply of water may be had for a small outlay in materials.

Five examples showing what may be done in this way are given below, with the approximate cost of materials in each case. Many farmers already have these improvements in their homes and a description of them here may be suggestive to others.

(1) In the typical country or village home both the cistern and well pumps are outside the house. The result is that, in all kinds of weather, the water needed for the home must be carried in pails, and this work usually falls on the women.

An outlay of ten dollars for materials will bring the cistern pump into the kitchen and save half this labor.

To bring cistern water into the kitchen:—Cost of materials:—20 feet $1\frac{1}{4}$ " galvanized iron pipe at 10c. per foot, \$2.00; pitcher pump, \$2.00; iron sink enamelled 18x30", \$2.50; brackets for sink, \$1.00; $1\frac{1}{4}$ " lead trap, \$1.00; 10 feet $1\frac{1}{4}$ " galvanized iron waste pipe, \$1.00; Total, \$9.50.

(2) If the well is, say, 50 feet from the house an expenditure of ten dollars more for materials will bring the well pump into the house also. It may be placed at the other end of the sink shown in figure 2.

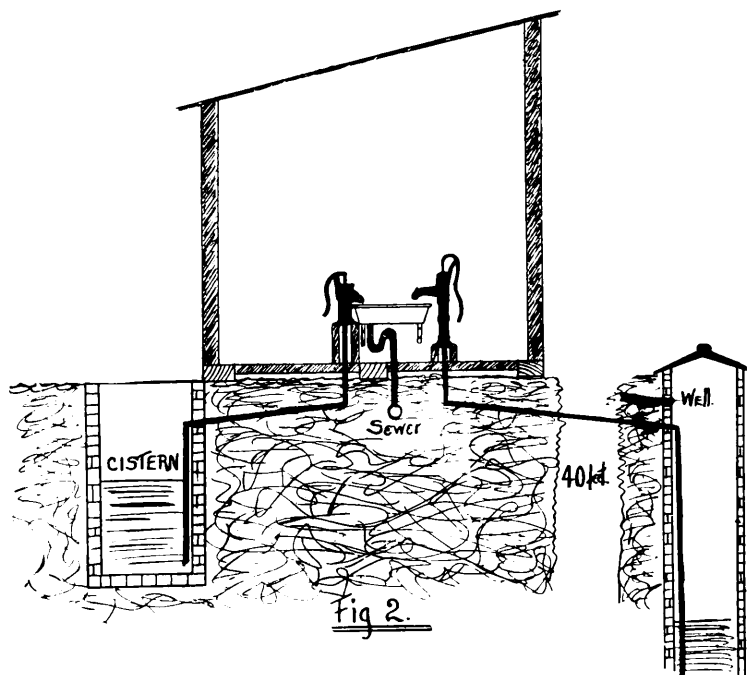


Fig. 2.

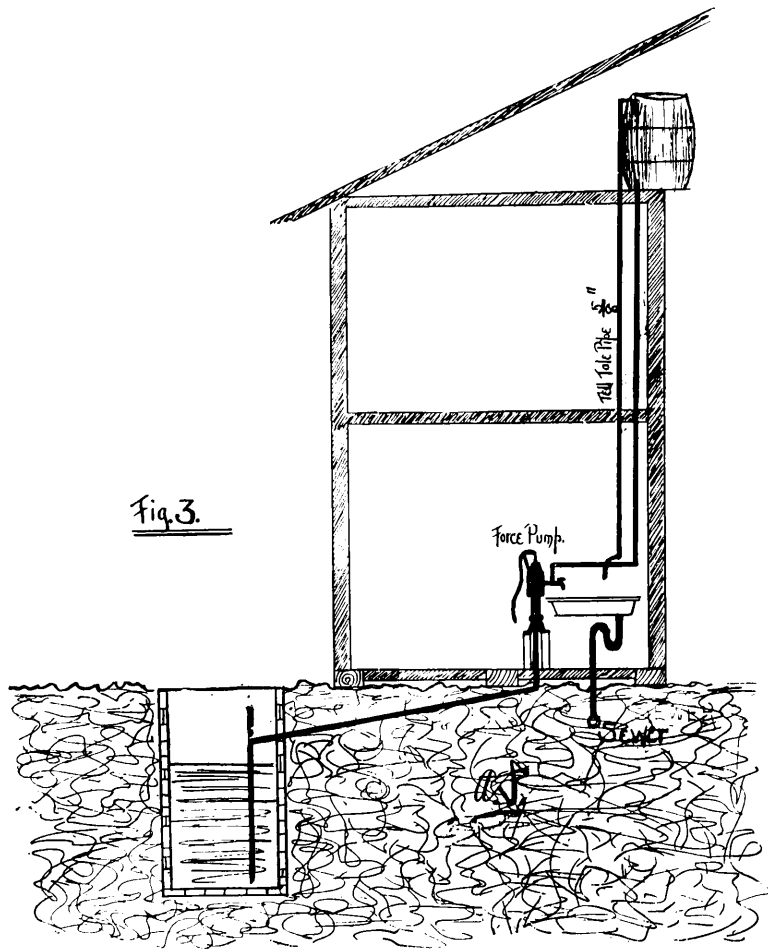
To bring well water into the kitchen:

Cost of materials, 75 feet $1\frac{1}{4}$ " galvanized iron pipe at 10c. per foot, \$7.50; iron pump, \$2.50; total, \$10.00.

(3) With the arrangement shown in figures 1 and 2, the water must be pumped as needed. A more convenient arrangement as far as the

for a tank, as it holds an ample supply for one day.

Supply tank in attic. Cost of materials, 20 feet $1\frac{1}{4}$ " galvanized iron pipe at 10c. per foot, \$2.00; force pump, \$6.00; 20 feet 1" galvanized iron pipe from force pump to tank, at 8c. per foot, \$1.60; barrel in attic, 50c.; tap at sink, 50c.; 20 feet $\frac{3}{8}$ " galvanized iron tell-tale pipe at 4c., 80c.; sink, trap



women of the house are concerned is to place a storage tank in the attic or on the second floor, into which the supply for the day may be pumped each morning by the men of the family. In this case a force pump is needed, also a 1" pipe to the tank, and a $\frac{3}{8}$ " tell-tale pipe from the top of the tank to the sink, to show when the tank is full.

In many cases an oil barrel is used

and waste pipe, as above, \$5.50; Total, \$16.90.

(4) Another great convenience in housekeeping is an abundant supply of hot water. This may be had as soon as water under pressure is installed, as described in (3) above. All that is needed for this purpose is a hot water tank connected to the water supply and to a water back in the fire box of the kitchen range.

Hot water supply:—

Cost of materials, 30 gallon steel tank, \$7.50; water back and connecting

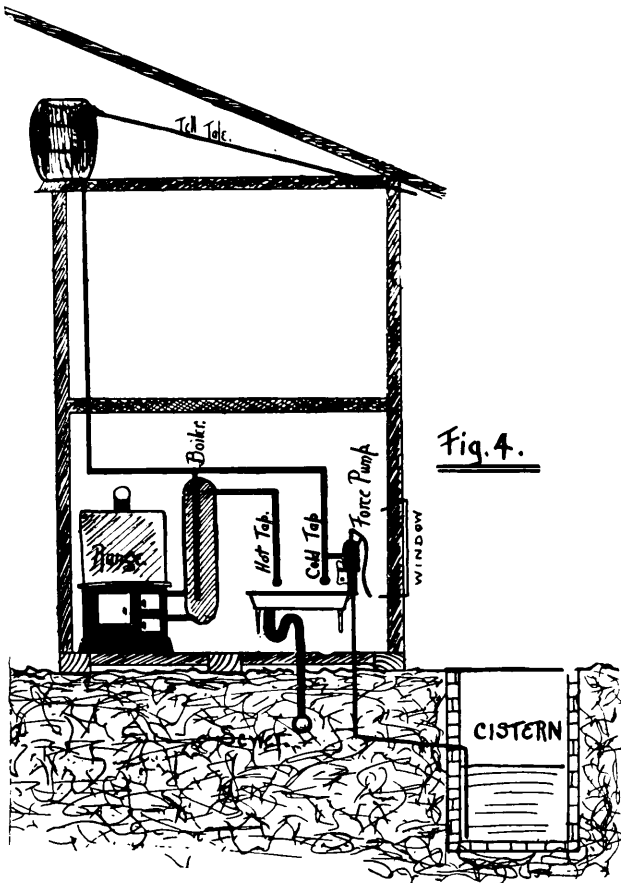
iron pipe for hot water, 80c.; hot water tap, 50c. Total, \$14.60.

(5) On many farms there is an abundant water supply in the stables but none in the house. When the stables are supplied by means of a windmill and elevated tank, a few feet of $\frac{3}{4}$ " iron pipe will give the house the same convenience.

If the stables are say 150 feet from the house and the tank is elevated 20 feet, about 180 feet of piping is needed.

Cost of materials, 180 feet $\frac{3}{4}$ " galvanized iron pipe at 5c. per foot, \$9.00; tap, 50c.; sink trap and waste pipe as above, \$5.50. Total, \$15.00.

All the materials mentioned here are durable and will last thirty or forty years and more, so that the cost of these conveniences comes to from fifty cents to one dollar a year. It will be admitted then that many of the advantages of an abundant water supply may be had for a very small outlay.



pipes, \$5.00; 10 feet $\frac{3}{4}$ " galvanized iron pipe from the cold water supply pipe at 8c., 80c.; 10 feet $\frac{3}{4}$ " galvanized

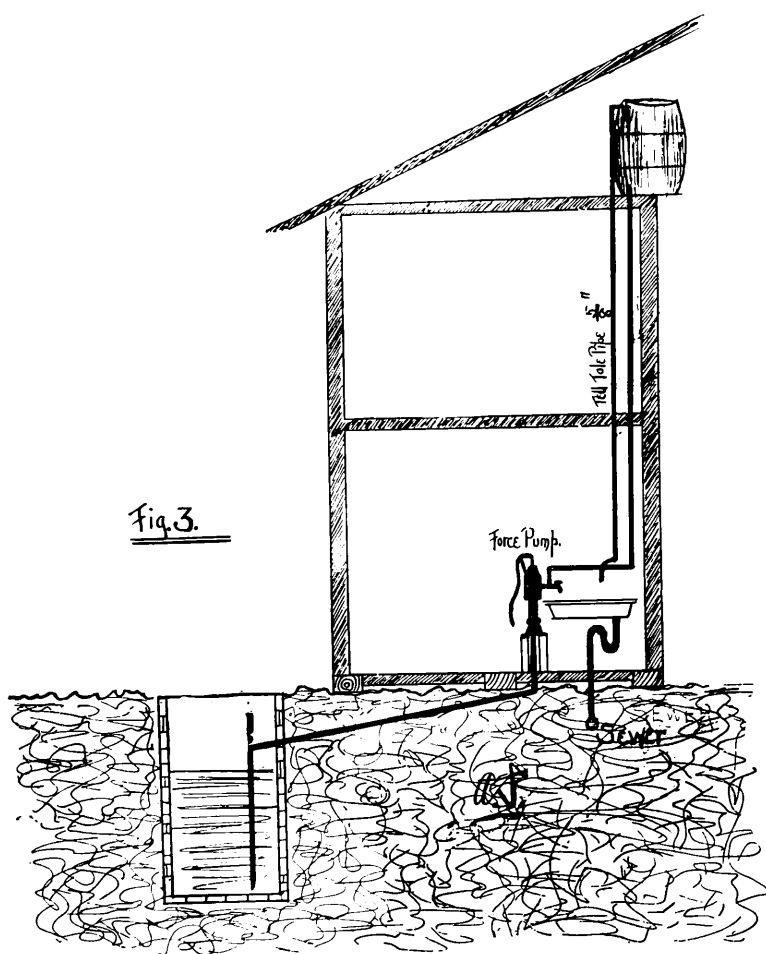
To bring well water into the kitchen:

Cost of materials, 75 feet $1\frac{1}{4}$ " galvanized iron pipe at 10c. per foot, \$7.50; iron pump, \$2.50; total, \$10.00.

(3) With the arrangement shown in figures 1 and 2, the water must be pumped as needed. A more convenient arrangement as far as the

for a tank, as it holds an ample supply for one day.

Supply tank in attic. Cost of materials, 20 feet $1\frac{1}{4}$ " galvanized iron pipe at 10c. per foot, \$2.00; force pump, \$6.00; 20 feet 1" galvanized iron pipe from force pump to tank, at 8c. per foot, \$1.60; barrel in attic, 50c.; tap at sink, 50c.; 20 feet $\frac{3}{8}$ " galvanized iron tell-tale pipe at 4c., 80c.; sink, trap



women of the house are concerned is to place a storage tank in the attic or on the second floor, into which the supply for the day may be pumped each morning by the men of the family. In this case a force pump is needed, also a 1" pipe to the tank, and a $\frac{3}{8}$ " tell-tale pipe from the top of the tank to the sink, to show when the tank is full.

In many cases an oil barrel is used

and waste pipe, as above, \$5.50; Total, \$16.90.

(4) Another great convenience in housekeeping is an abundant supply of hot water. This may be had as soon as water under pressure is installed, as described in (3) above. All that is needed for this purpose is a hot water tank connected to the water supply and to a water back in the fire box of the kitchen range.

Hot water supply:—

Cost of materials, 30 gallon steel tank, \$7.50; water back and connecting

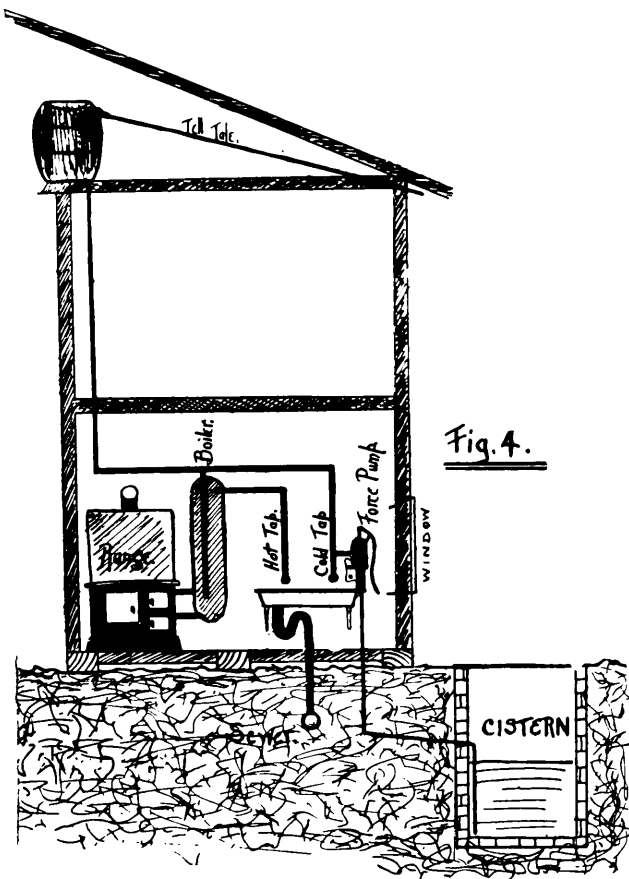
iron pipe for hot water, 80c.; hot water tap, 50c. Total, \$14.60.

(5) On many farms there is an abundant water supply in the stables but none in the house. When the stables are supplied by means of a windmill and elevated tank, a few feet of $\frac{3}{4}$ " iron pipe will give the house the same convenience.

If the stables are say 150 feet from the house and the tank is elevated 20 feet, about 180 feet of piping is needed.

Cost of materials, 180 feet $\frac{3}{4}$ " galvanized iron pipe at 5c. per foot, \$9.00; tap, 50c.; sink trap and waste pipe as above, \$5.50. Total, \$15.00.

All the materials mentioned here are durable and will last thirty or forty years and more, so that the cost of these conveniences comes to from fifty cents to one dollar a year. It will be admitted then that many of the advantages of an abundant water supply may be had for a very small outlay.



pipes, \$5.00; 10 feet $\frac{3}{4}$ " galvanized iron pipe from the cold water supply pipe at 8c., 80c.; 10 feet $\frac{3}{4}$ " galvanized

Saving Steps in the Home.

By MRS. J. MULDREW, House Mother in Women's Residence, Macdonald College.



NOT so long ago it was generally accepted as a fact that a girl who was not gifted and who was on that account debarred from taking up any special line of work, was quite equal to the task of home-making. "She is not a clever girl at all, she is going to be the housekeeper." How many of us have heard that statement, and alas! may possibly hear it again. There are the good, the bad, and the indifferent in all walks of life, so it is not surprising to find some indifferent housekeepers. But seriously, does good housekeeping require less brain power than good teaching, or book-keeping, or millinery, or dressmaking, or business?

The woman who is at the head of a home is responsible for the well-being and in a great measure for the happiness of all the members of the household. She must administer to the physical wants, food, clothing, and other things. She must have the oversight of the means of comfort, the heating, lighting, ventilating of the house. She must make sure of the sanitary conditions within and without, and to do this she must have a knowledge of the requirements. She must be ready to meet all emergencies that arise, do a certain amount of nursing, be ready to entertain the unexpected guest, and in general be the guide, philosopher, and friend of all.

While all this is required of her, she must live in a limited sphere, and daily go through much sameness of duty.

She has not the relief from monotony that comes to a business man through contact with other men, nor the respite that comes to women whose duties call them only between certain specified hours.

Since this is so it is easily seen that her only means of rest and recreation is in wise management, good judgment, a thorough knowledge of methods of work, and an intelligent distribution of time and energy. If the home-maker is to be equal to the demands made upon her, and to keep a reserve force, it is necessary that she have a strong mind, able to discriminate between the essentials and the non-essentials, and brave enough to act according to her convictions. She must learn how to husband her strength by saving steps. As the old proverb has it: "She must make her head save her heels." This can be done most effectively if the woman has a share in the planning of her house. May I digress here to say that we shall never have the best homes until women learn their power in this direction and study and plan the homes of our land? Women architects for dwelling-houses—Why not?

The planning of a house will effect a saving by providing proper spacing and proper arrangement. The work rooms, kitchen, pantry, laundry, and store-rooms would receive the most attention. I will mention some things that I think would be of value in this connection. A kitchen should not be too large, and the relation between range,

table, cupboard, and sink, should be such as to enable the housekeeper to do a large amount of work with a small amount of walking. A closet off the kitchen for clothes is a great saver of steps. No clothing should hang in the place where the cooking is done, and yet it would be a great tax to go upstairs for all wearing garments, especially the working coats and hats. The place for these should be accessible to the kitchen, and should permit of being heated by the kitchen range, and should have a window for ventilation and for light.

The placing of the pantry between the kitchen and the dining-room saves steps, and if the pantry be made large enough it can also serve as a store room. If it has an outside window, a window cupboard can be made from a frame the size of the lower sash, covered with wire mosquito netting. This will be of more value if it can be shaded from the sun.

A truck on rollers saves many steps, and if used properly is a means of educating in accuracy. Let us suppose, for example, that the table is to be set in the dining-room for seven. Everything necessary for the setting of the table can be put on such a truck at one time, and the truck wheeled into the dining-room. When the meal is ready to serve, the food can be taken in the same way, and the truck left as a dinner waggon near the table, and the dishes can be placed on it and removed at one trip. In a family where there is no help it is necessary to simplify the service, and for this purpose the truck is valuable.

If a woman has a voice in the house planning she will have the water brought into the house. Men have shown me proudly plans they had been

able to carry out to bring water into the stables, while the women folk at the same farm carried water some distance from a well for household purposes.

In planning a house too little attention is paid to providing for the care and the cleaning of it. Ceilings are made so high that the cleaning is difficult, windows are inaccessible, attics are not lighted, pantries have no windows, and dark cupboards are left under stairs; all these make problems for the housekeeper and add to her difficulties. A balcony with a door leading from the hall upstairs makes it possible to air the clothing constantly, and in the house cleaning seasons it makes possible the cleaning of heavy mattresses without having to drag them down stairs and up again.

In the matter of utensils, in order to save time and labor, it is as important that the house be well equipped as it is that the farm be well provided. Catch an up-to-date farmer struggling with an old used-up mower or binder! Not he! He says, and correctly, that time is money, and new machinery is provided when the old has served its time. Why then should a woman get along as best she may this year and the next year with an old worn out washing machine, or heavy churn, or half-broken wringer, or stick rags into holes in the old boiler and scour it again and again to make sure it does not rust the clothes? This is all wrong. If the thing has served its time and is worn out, don't let it wear you out. Get a copper boiler that does not get out of repair easily, a ball-bearing washing machine that the baby can run, and a new wringer if you need it. Be just as up-to-date as your husband, and he will think more of you.

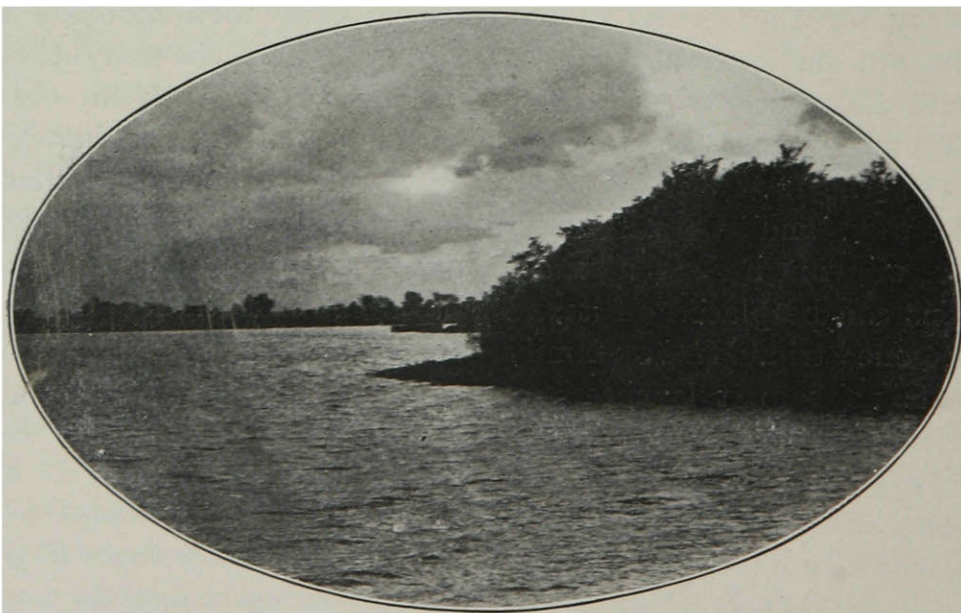
There are many labor-saving devices on the market; some are valuable and some are useless, as they take more trouble to manage them than they save. A few tested and true ones are a mop-wringer, a meat chopper, a good sewing machine, a few small cooking utensils, as a measuring cup, lemon-squeezer, egg-beater, and small paring knives. All these are good, but only as a means to an end. The end must justify the means. The saving should show its benefits to the home-maker, and from her be reflected upon the house and all the household.

To effect a saving in steps, the housekeeper must plan her work by the season, by the month, and by the week. She must not be caught unawares. The buying as well as the spending must be well planned; things that can be bought in quantity such as flour, sugar, potatoes, soap, etc., can be arranged for to suit the income. For

instance, this store should be laid in so that the extra demands on the purse that winter always brings will not come at the same time.

Flies make a great deal of work and are a great source of annoyance. They are brought to the house often by carelessness, so that the housekeeper must be sure of good sanitary conditions outside. A good well protected drain, and screens that fit the doors and windows are necessary precautions to prevent flies entering the house.

While there can be no plan for saving steps that will apply to all cases, yet in every home much can be done by foresight, by method, and by a fair division of labor, and by making use of the various kitchen utensils to make home a much more attractive place for the busy home-maker, and from her to reflect upon all the members. By having better homes, we shall have better human lives.



SCENE ON THE OTTAWA RIVER, NEAR THE COLLEGE.

Secrets of a Great Kitchen.

HOW MACDONALD COLLEGE IS FED.



HERE is, in all probability, no institution in Canada where so many wonders of human ingenuity and scientific appliances are gathered together, as are to be found at Macdonald College. But if any visitor to the College is so unfortunate as to

which caters every day for just 400 people in the adjoining dining-room.

As might be expected, every up-to-date appliance is brought into requisition, in this huge task, to economise time and labor. Which of our readers would like to undertake to cut with a knife one thousand slices of bread three times a day? Yet this is done with ease with a very simple machine



THE COLLEGE BAKERY.

A Daily Task.

miss seeing the kitchen, with its wonderful labor-saving machinery, he loses a most interesting and instructive hour.

By the kindness of Miss J. M. Macnaughton, the Assistant Dietician, two special representatives of the MACDONALD COLLEGE MAGAZINE recently enjoyed the privilege of seeing the entire equipment of this Department,

called the bread slicer, which is worked by hand, and which can be regulated to cut the bread to any desired thickness, from an eighth to three-quarters of an inch. Another machine, more elaborate, constructed on the same principle, slices almost as quickly all the bacon consumed by the College. This is known as the bacon slicer.

Another task which in a private household occupies a considerable time each day is potato peeling. If the same methods were employed here the labor would be enormous. Fortunately, some fertile brain invented the potato peeler. You put a great many potatoes into a large rapidly rotating vessel, by whose roughened sides and bottom the skin is quickly scraped off. Then you turn off the electric current and take out the potatoes, ready for steaming.

Other interesting machines in daily use are the vegetable dicer, beet slicer, meat grinder, and knife cleaner. The last named instrument is a fearsome looking apparatus, electrically worked, which cleans the many hundreds of knives with wonderful speed and also sharpens them when required.

This great kitchen makes extensive use of steam heat both in the cooking of food and the warming of utensils. All the vegetables, for example, are cooked by steaming them in the large vegetable steamers. Throughout each night the oatmeal porridge or other cereal for the next day's breakfast, immersed in six great earthenware vessels in the Cereal Steamer, is slowly cooked by the same means. Steam heat is also used to warm the many hundreds of plates and dishes, which are placed inside a series of iron cylinders round which the steam circulates, to keep warm the cooked dishes until they are wanted, and for many other purposes. Indeed, one of our representatives, whose ignorance of Household Science is abysmal, inquired when he was shewn the bread toaster, whether the bread was toasted by steam. With

a glance of supreme contempt the Assistant Dietician lit the gas jets which performed this work.

Probably the most important labor economiser, and the most simple in operation, is the Dish Washer. The plates and dishes are placed in a large basket attached to an overhead pulley and lowered into a vessel of warm water in which the basket is violently agitated. The basket and its contents are then wheeled on to the next vessel, and then to a third, the water being hotter in each successive bath. All the dishes and table crockery used by four hundred people are in this way thoroughly cleansed in an hour.

The last but not the least interesting of the wonderful contents of this kitchen is the Bakery. Our illustration shows the great oven with its massive sliding floor, on which one hundred and sixty-four loaves of bread are baked every day. Eighty pounds of fuel are required to bake the first batch, but, curiously enough, it only requires another twenty to bake a second. We have not space for more than a bare mention of the other features of this bakery—the flour-sifter, dough-mixer, bread-prover and cake-beater.

Our readers will naturally wonder how many workers are required to run this huge kitchen. We shall conclude this article by satisfying their curiosity on this point. There are fifteen dining-room maids, seven housemaids, four kitchen cooks, two bakery-cooks, two store-room maids, one kitchen man, one pantry man, one hospital maid and one linen maid.

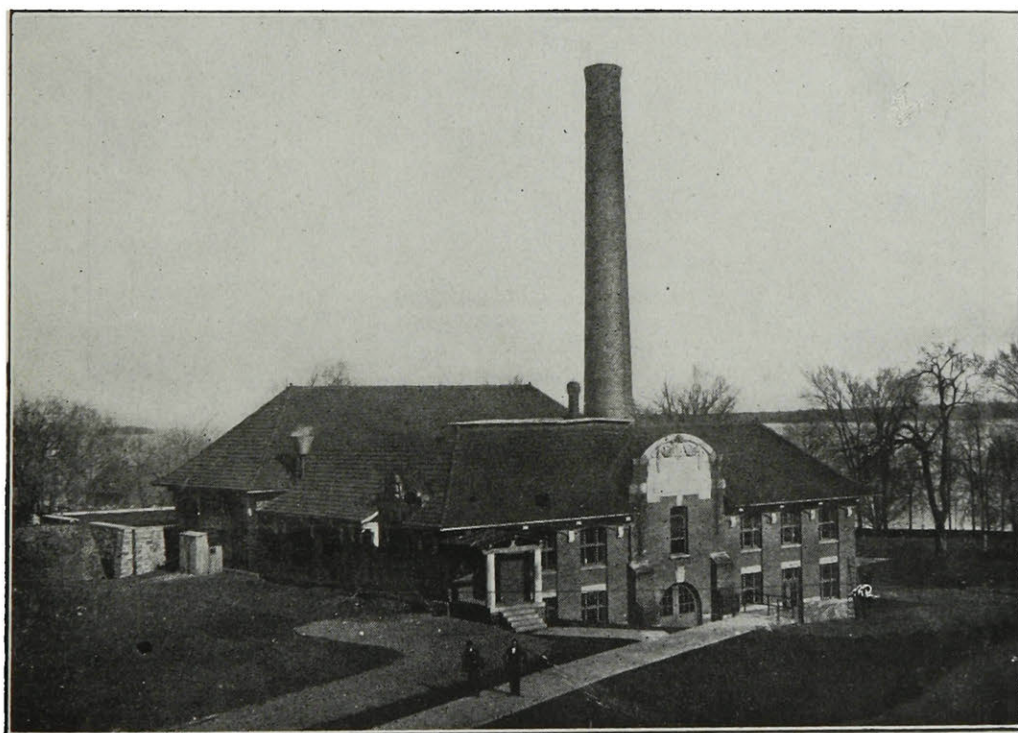
Interesting Facts about a Great Institution.



MACDONALD COLLEGE is visited every year by thousands of visitors. Some of these visitors are intent on one thing and some on another. Many come "just to see the place," many come "to see friends," and yet more come prompted by the same motive which led the Queen of Sheba to visit Solomon.

Some of these facts have been gathered together and are given below. Many of them will be new even to Macdonald College Students.

It should be kept in mind that Macdonald is only **one** College of a University. If, therefore, a comparison is made with any 'similar Institution the result is rather striking. For instance, the New York State



THE POWER HOUSE, MACDONALD COLLEGE.

While such visitors feel that the striking and prominent features of the College are of great interest, and are perhaps in many instances unapproached in similar Institutions elsewhere, they naturally feel that there are other interesting facts about the College which they do not see or hear about.

College of Agriculture at Cornell University, which is one of the largest and most modern Agricultural Colleges in the States, has a great deal less floor space than Macdonald College has.

The following facts therefore may help to strengthen the belief, that this College is equipped to do, and has

begun to do, and will do, a great work for the Province of Quebec.

COLLEGE BUILDINGS.

Two million eight hundred and sixty-nine thousand pressed bricks were used in the erection of the seven large College buildings.

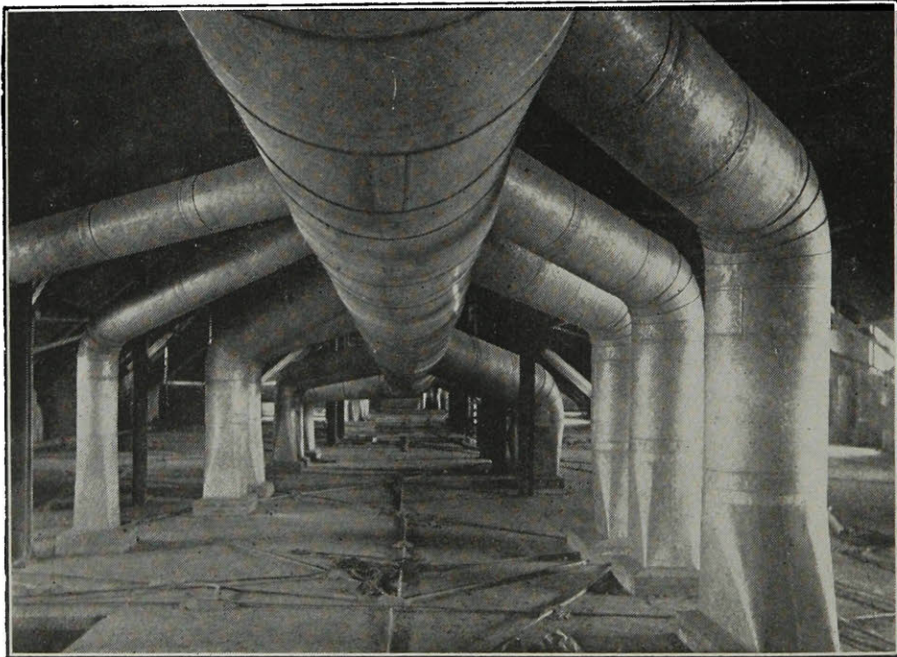
The building stone taken from the quarries on the farm, and used in the foundation of the buildings and in road construction, would require over fifty miles of freight cars to convey it

The floor space equals fifteen and one half acres.

The perimeter of the buildings equals one and six-tenths miles.

The Main Building is three hundred feet in length. The Chemistry-Physics building and the Biology-Bacteriology building are each one hundred and seventy-two feet long and seventy-two to eighty-six feet wide.

The cubical content of the buildings is over four million cubic feet.



IN THE ATTIC OF THE MAIN BUILDING.

away. The quarrying of this stone necessitated the employment of a large force of men from about May to October for several years. During this time an average of sixty-six sticks of dynamite were used daily for blasting purposes.

One hundred thousand bags of cement were used in the construction of the fire-proof roofs, floors, and for the construction of the tunnels.

HEATING, LIGHTING, AND VENTILATION.

The Power House, an illustration of which is here given, is one of the most important buildings at the College. From it all the other buildings are supplied with heat, light, water, gas, etc.

The heat is conveyed, as steam, in immense pipes which are covered with asbestos. In order that these pipes may be repaired at any time at a

moment's notice they are conducted to all the buildings through concrete tunnels. All the rooms, corridors, etc., are warmed by means of radiators, the radiating surface of which equals eighty-five thousand square feet. Steam is also used for many other purposes both in the laboratories and kitchens.

The light.—All light is electric, although gas is used for cooking and in the laboratories. There are eight thousand electric lights in the buildings and on the campus. This number is exclusive of those used in the farm barns, etc.

The College yearly coal bill is over \$14,000.00. In severe weather twenty-five tons of coal per day are used. Automatic feeders for feeding the coal are attached to the six large one hundred and fifty horse-power tubular boilers in the Power House.

Ventilation.—The accompanying illustration shows part of the ventilating system of the Main Building. This view is taken in the attic; the counterpart of the system is installed in the basement of the same building. Each building is provided with a similar installation. Each room has two ducts connected to the ventilation system. One duct conveys the fresh air into the room and the other takes away the foul air. In cold weather the fresh air is warmed before going to the rooms by passing it through steam-heated coils. Also, when necessary, electric fans are used to force the fresh air into

the rooms. These fans are capable of supplying one hundred and twenty thousand cubic feet of air per minute.

WATER SUPPLY—Pure water, in a great institution like Macdonald College, is an absolute necessity. Special water is supplied to all the buildings for drinking purposes. This is obtained from a drilled rock well, one hundred and seventy feet deep. In addition to this there is used every day ordinary water pumped from the Ottawa River to the amount of seventy thousand gallons, twenty thousand of which are heated.

TUNNELS AND CORRIDORS—The wonderful system of tunnels and corridors connecting the various buildings is a quite original feature of Macdonald College. These equal over 900 feet in length. The convenience of having these tunnels in wet and cold weather is fully appreciated by all those at the College.

There are many other interesting items which might be mentioned, but on account of exigencies of space they are left over until a future number, when it is hoped they may be included in a short article on the "Making of the College Farm."

NOTE—The Editors are indebted to Mr. Geo. Richards and Mr. W. C. Richards for many of the facts given above.

Short Courses in Agriculture.

By L. S. KLINCK, M.S.A., Professor of Cereal Husbandry.



SHORT COURSES for farmers and farmers' sons have now come to be generally recognized as an essential feature of the work of every Agricultural College. The aim of these Courses is to put into readily assimilable form such information relating to applied agriculture as shall enable those interested in farming to get, in the short time at their disposal, the essence of the results of investigation and research bearing upon the practical problems of every day farm practice.

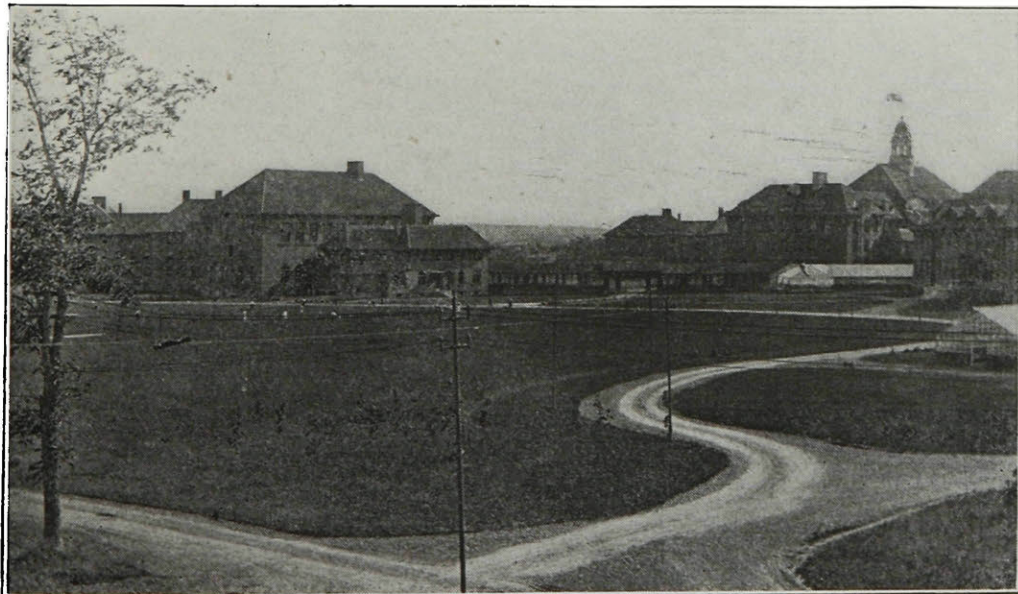
When first instituted, the Courses consisted largely of lectures by the instructors in charge. This method proved only fairly successful, as the majority of Short Course men had been accustomed to do things, not to talk about them. Accordingly, when more provision was made for student judging work, it proved a most effective and popular method of presentation. As a result, the greater part of the time is now given over to an actual study of Live Stock, Poultry, Horticulture, and Field Crops, with just enough time assigned to the related sciences to give balance and proportion to the Courses.

In addition to the time allotted for practical work in the judging pavilions, short periods are devoted to the discussion of topics chosen by the students themselves. From the outset there has been neither lack of interest nor dearth of questions. These periods become, in fact, open conferences in which all take part. Night sessions are frequently held at which questions growing out of the work of the day are discussed. These evening meetings have proved very helpful, as the men touch elbows and exchange ideas and plans growing out of their own experiences. Several of the evening sessions are devoted to formal addresses by specialists of wide reputation and experience. These addresses have always proved most inspiring and educative.

Short Courses, as at present constituted, are productive of much good and are highly appreciated by those in attendance. Where, however, the principle of holding these Courses in different counties is recognized and applied, a still greater advance will have been made in rendering assistance of the most practical nature to the farming community of the Province.



WINTER SHORT COURSE STUDENTS IN THE SCHOOL
OF HOUSEHOLD SCIENCE.
(From a snap-shot by a member of the class.)



THE WOMEN'S ATHLETIC FIELD, MACDONALD COLLEGE.
Women's Residence to the left. Main Building to the right.

Under the Desk Lamp



THE Editors wish to thank all those who have very kindly sent congratulatory letters regarding the first number of the MAGAZINE.

It is with some satisfaction that they notice that in nearly every one of such letters some complimentary allusion was made to the illustrations.

drawing by Miss Dorothy I. Petts. The very neatly executed drawings of the year pennants and pins and also the pen and ink drawings illustrating Dr. Harrison's article are the work of Mr. Ernest Rhoades. Those illustrating Dr. Lynde's article were drawn by Mr. A. Savage.

* * *



THE PRIZE SNAP-SHOT.

The full page illustration of the "Macdonald Girl" in the first number of the MAGAZINE was from an original drawing by Miss Marion McDonald. The full page illustration, in this issue, of the "Macdonald School-Marm" is from a

It gave the Editors great pleasure to receive two very neatly executed drawings by one of the Alumnæ, Miss E. M. Roy, of the Household Science Class '08. These are reproduced in this issue and form the "heading" and the

"end piece" of the Social section, being, as will be noticed, complementary to one another.

PRIZES.

The prize of \$5.00 offered for the best humorous verses is awarded to Mr. R. S. Kennedy.

The prize of \$2.00 offered for the best snap-shot is awarded to Mr. C. M. Spencer. This appears below. Several other contributions were sent in to compete for the other prizes offered, but for various reasons the Editors were unable to make any awards.

SPECIAL PRIZES

They have, however, very much pleasure in awarding special prizes as follows:

A prize of \$3.00 to Mr. Ernest Rhoades for the pen and ink design used as the heading in this issue for the "Live Stock and Dairy Section."

A prize of \$2.00 to Miss E. M. Roy, Sabrevois, Que., for the original sketches sent in by her, and reproduced in this issue.

WHY PROSPEROUS?

It is certainly much easier for the average man to assign a reason for individual success or failure than it is for him to assign a reason or reasons for national progress or stagnation. But it does not take a great deal of acumen to see that there is a good reason why some countries, which less than half a century ago were hopelessly behind in the struggle of the nations, are now so prosperous. It is largely, if not entirely, due to a revival in agriculture.

The political and educational leaders in such countries have attempted to elaborate a system of education which met the needs of the agricultural section of the population. In a great measure they met with success. But in other countries there is still an

astounding anomaly with regard to education and agriculture. In Canada for instance, the amount of education bearing directly on agriculture which fifty per cent. of the population receives is so small as to look absurd. It certainly seems reasonable to assume that the axiom "if a man is to excel in any calling he must be trained in it" has, in some degree at least, a national application. For instance, Sparta, being a warlike country, had a national system of warlike training for her sons. Why then should not Canada, which is above all things an agricultural country, have some sort of an organized and national system of education which bears directly on agriculture? The rapid development of the dairy industry in Ontario as soon as it received Government assistance, is one illustration of the way an industry responds to the right kind of help given by the right people.

WHY ARE THE AGRICULTURAL COLLEGES FULL?

A most striking fact is that every institution of higher learning which attempts to give an education that bears directly on agriculture is already full to overcrowding. The fact that many of the students are from the cities and not from the farms is beside the point. The point is that the people as a nation are beginning to see that if profitable agricultural practice is to be pursued, men will have to be trained for it and to it. If the mainstay of this country were manufacturing, none would doubt the wisdom of increasing the number of technical institutions.

Denmark is a splendid example of what the scientists and national leaders have done for the rural population. Education in that country

bears directly on the farm. Ninety per cent. of the farmers own their own holdings. These holdings are small but they are worked like gardens. The State serves the farmer in every possible way. It owns the railways and makes them serve the farmer. It loans them money, but best of all it gives them an education compatible with their calling. A National system somewhat similar but planned to meet the problems in every part of our Dominion is what we need here in Canada. That some sort of a start has been made is not so much a cause for satisfaction as it is a reason why effort should be made to get what will better meet the need.

THERE IS A REASON.

There is, however, a reason, and a very good one, why so many men who have not been brought up on the farm are found in our Agricultural Colleges. Such men choose an agricultural calling for various reasons, and it is unreasonable to assume that they are not likely to be successful as agriculturists. On the contrary it should be assumed that success for them is just as probable as it is for their classmates who have been brought up on the farm. As a matter of fact there has been, of late, considerable proof in support of this suggestion. Especially has it been noticeable in the case of men who have had previous training in business or other vocations. Now, if these men go

out to the great calling of agriculture, and infuse, as it were, new blood into it, it is surely a good thing to encourage them at our agricultural colleges, and even a better thing to encourage the growth of these institutions that such men may get at least a good preliminary and rational training in the science of a calling which is now recognized as one of the finest of industries.

HELP SHOULD BE GIVEN WHEN ASKED FOR!

It is certainly no slight duty which the Leaders of this Country have towards a calling and an industry which is, as it were, just now awakening from a long period of lethargy.

Agriculturists are everywhere asking for help in order that agriculture may catch up with other industries in business system and scientific practice. The Agricultural College must always remain one of the most important mediums through which help is given. But the Agricultural College is still in its childhood days, many of its methods need remodelling before it can become the force that it should be in countries like Canada.

EXCHANGES.

During the past few weeks several journals have been received from other colleges by way of exchange. We thank their editors for these. In future numbers we hope to have an exchange column.

Faculty

The Macdonald College Club.



IN accordance with an oft-expressed wish that the members of the Faculty and Staff of the College might have a literary and social organization, the Macdonald College Club was formed early in the winter of 1908. Prof. Lochhead was the first President; Dr. Snell the first Secretary.

The meetings of 1909-10, under the Presidency of Dr. Lynde, and the Secretaryship of Prof. Arkell, have been characterized by the same high level of excellence as obtained during the first year of the Club's existence. In November, Prof. Dale gave an illustrated lecture on Oxford. His personal reminiscences of student life in the great university and his vivid word-pictures, descriptive of the surroundings of this ancient seat of learning, were much enjoyed. Photographs and views of Oxford, shown in the library at the close of the lecture, added materially to the value of the evening's entertainment.

Local talent furnished the programmes for the next two meetings. The first evening, Miss Peebles read a humorous paper on "A Coaching Trip through Great Britain," and Prof. Kneeland and Dr. Robertson spoke on impressions gathered during their summer trip through the Western States and Canada. At the next meeting "The Life and Works of Thomas Moore," the Irish poet who has endeared himself to the hearts of all Canadians as the author of "The Canadian Boat Song," was most entertainingly presented by Dr. MacFarlane and Dr. Brittain.

Mr. Charles Godwin of Montreal gave several readings from the works of Dr.

Drummond at the February meeting. Mr. Godwin appeared in the costume of a French-Canadian habitant, which fact gave added color and picturesqueness to the sympathetic rendering of his well-chosen readings.

Music, vocal and instrumental, has added much to the profitable pleasure of these meetings. To Madam Cornu, Mr. McDougall and to the Misses Jarvis, Bigelow and Russell especial thanks are due.

Upon the invitation of Dr. and Mrs. Lynde the March meeting was held in their home, where a much-enjoyed social evening was spent.

From the outset, the attendance at the meetings, and the interest manifested in the varied programmes presented, have been the strongest evidence that there is a place for such an organization in the literary and social life of the Faculty and Staff of the College.

THE SNOW-SHOE CLUB.

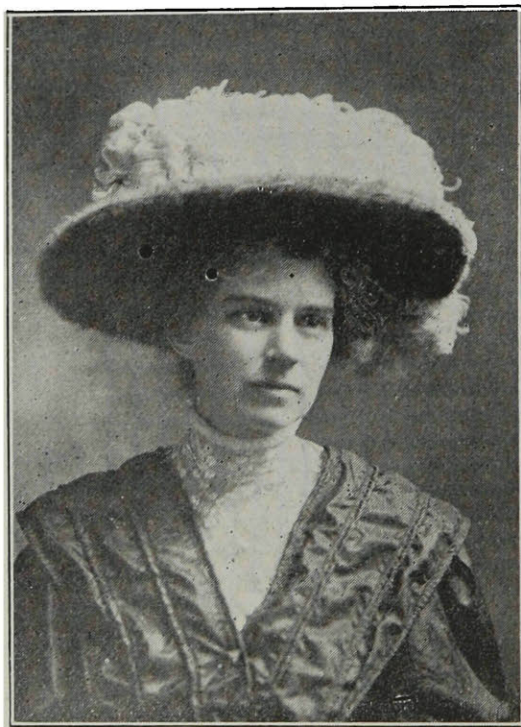
To those not given to excessive musing by their own fireside this club makes a strong appeal. Through the avenue of this organization have come many enjoyable evenings during the present winter. Interest has not been confined to the younger members of the Faculty; to many of more mature years the call to the weekly "tramp" has come with an irresistible appeal. Refreshments, served at the homes of members, have given added opportunity for social intercourse and have brought to a most satisfying close many an enjoyable tramp. The keen interest evinced by the large membership in this Club bears witness to the wisdom of the organization of a club for the enjoyment of this invigorating out-door recreation.



MISS ANNIE B. JUNIPER who for the last two years very efficiently filled the position of Dean of the School of Household Science at Macdonald College, left on Tuesday evening, March 29, for Winnipeg, to take up a similar position in the University of Manitoba. Although it is several months since it became known that she had resigned, the full realization of the loss to Macdonald College is only now being felt.

fessor Thompson of London University, and Miss Juniper was recommended. When she first came to Canada, she began work in the Macdonald School in Middleton, N.S. The work proved so engrossing that she severed her connection with the Old Land, and has served the cause of education for the last six years in Canada.

From Middleton she went to Hillsboro, P.E.I., and when the Domestic Science Department was opened in connection with Prince of Wales Col-



MISS ANNIE B. JUNIPER,
Dean of the School of Household Science,
Macdonald College.

Miss Annie B. Juniper received her training at the Norfolk and Norwich School of Household Science, spending, after graduation, some time in a similar school in London. She was then offered an appointment under the Norwich School Board, and after two years' experience there taught in other parts of England, and four years in Wales. When Dr. Robertson wanted a teacher of Household Science in the Macdonald Consolidated Schools, he sent to Pro-

legue, Miss Juniper was placed in charge. Two years ago she resigned her work there to become Dean of the School of Household Science at Macdonald College, and here, as elsewhere, she has done her work well, and has merited the increased responsibility and larger sphere of usefulness that comes with her new appointment as Dean of the School of Household Science at Manitoba Agricultural College.

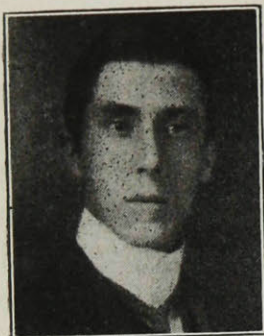
Miss Juniper has a large task before her in Manitoba. As her department has only recently been opened, she will have to organize it and plan and equip the necessary buildings. In the meantime accommodation has been provided in the Main Building at the Agricultural College, where the first course opens on May 3, continuing for three months. As soon as the College buildings are ready, courses very similar to those at Macdonald will be put on. As modifications will be necessary to suit Manitoba conditions, Miss Juniper plans a systematic visit to the towns and districts of the Province during the winter of 1910-11 in order to obtain first hand knowledge of those conditions.

That Miss Juniper was held in high esteem by her friends at Macdonald was amply demonstrated by the many tokens of regard she received. Miss

Peebles, Head Mistress of the Day School, who throughout the past year shared the "Model Apartments" with Miss Juniper, gave an "afternoon tea" in her honor. Several other members of the Staff and friends gave similar functions. The crowning function, however, was the "card party", given by Dr. and Mrs. Harrison, at which Miss Juniper was the "guest of honor" and to which the other members of the Staff and friends were invited. About fifty guests were present, spending a delightful evening in Progressive Euchre. By these and other tokens of regard, Miss Juniper was shown that those who had been associated with her honor and respect her, and no doubt, in days to come, she will often call to mind with pleasure the enjoyable and congenial associations at Macdonald.



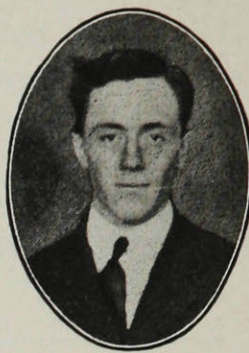
MISS N. MACMILLAN,
Matron in Men's Residence, Macdonald College



1



2



3



4

1. R. W. D. ELWELI, President of the 1912 Society.
2. J. E. McQUAT, " " " 1913 "
3. E. A. LODS, " " " Macdonald College Society.
4. W. H. BRITAIN, " " " 1911 Society.

Presidents of College Literary and Debating Societies, 1909-'10.



P. CHURCH.

E. M. DAVIS.
Z. HONEYD. HARRISON.
M. A. STEWART.

F. L. FRENCH.

Presidents of the Women's Court of Honor 1909-'10.



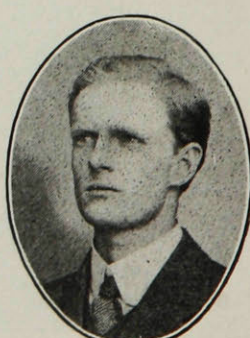
E. FOSTER,
President of the Girls'
Athletic Association.



F. E. BUCK,
President of the Men's
Christian Association.



R. SUMMERBY,
Chairman of the
Residence Committee
(Men's Building).

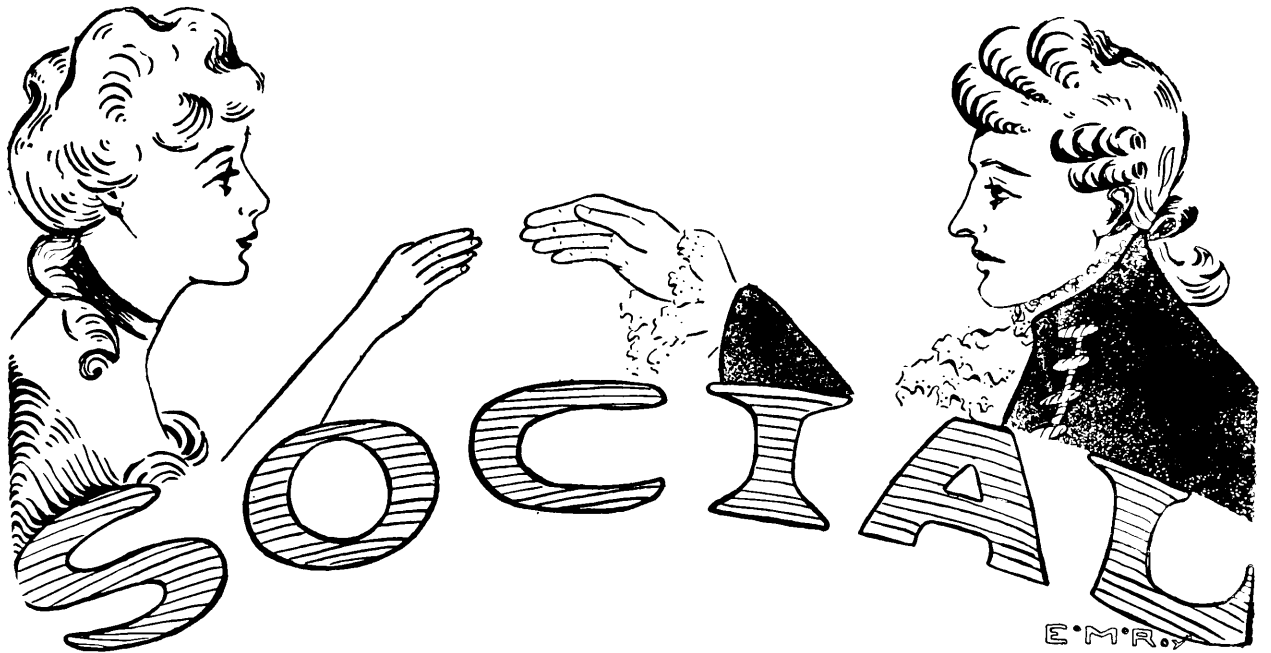


C. M. SPENCER,
President of the Men's
Athletic Association.



M. E. TANNER,
President of the
Cercle Français.

Presidents of other impor



The Masquerade.

By DOUGLAS WEIR, B.S.A.



THE "Mi-Carême" Bal Masqué given by the Bachelors in Residence, on the 4th of March, was successful in every point of view. Without disparaging previous efforts we think it may fairly be claimed that the decorations, the costumes, the supper, and the hundred and one things essential to elegance and comfort, marked the climax of spectacular entertainments at Macdonald so far.

"The guests began to arrive," reports a veracious chronicler in the "Witness," "about 8 o'clock, but long before this hour the halls of the residence were filled with Indians, monks, clowns, courtiers of all centuries, knights, generals, soldiers and sailors, with here and there some greater dignitary, even King Edward gracing the company with his presence. Also, two or three ladies were seen, although it was known that the guests from the Ladies' Residence had not arrived. But

soon they came, little girls, big girls, nurses and sisters of mercy, old ladies, middle-aged ladies, young ladies, in all the fashions of the last five centuries, dominoes, duchesses, flower-girls and maids, brides and mothers-in-law. Even the suffragette deigned to make her presence known. Old Dutch Cleanser was there, and 'Topsy' came as well, Chinese, Japanese, Indians and Africans, not to mention 'Buster Brown' and 'Mary Jane.'

"These were all received in the Gymnasium by Miss Macmillan, Matron of the Men's Residence; Dr. Sinclair, Dean of the School for Teachers, representing the Bachelors of the Faculty in Residence, and Mr. A. Savage, President of the third year, representing the Boys in Residence.

"At 9 p.m.," according to the same authority, who seems to have taken careful notes, "the programme was opened with the Grand March, led by Dr. Sinclair and Miss Macmillan. From

the Gymnasium throughout the whole length of the lower corridor, up the east stairs, back along the upper corridor and down the west stairs to the Gymnasium again the line extended, five hundred people, two by two, with everyone in costume and scarcely a costume duplicated. It was a most beautiful sight and well worth all the time and energy spent to make it possible. Back and forth through the Gymnasium the line passed and re-passed until the grand march was

2500 sandwiches, lemonade to the amount of 50 gallons, to say nothing of an additional 50 gallons of cocoa and coffee, 2 barrels of fruit, 2 barrels of apples, 15 gallons of ice cream, etc., etc.

We think it well to mention these interesting facts for the use and guidance of future caterers upon like occasions.

What pen can adequately describe the thrilling beauty of that moment when the lights were all suddenly extin-



FLASHLIGHT OF THE MASQUERADE.

finished. But the programme had only begun."

At 11 o'clock adjournment was made in procession through the long subway for supper. As indicating the ardor with which the masqueraders must have devoted themselves to the dancing and promenading, and as demonstrating the excellent quality of all that was provided for food, we are informed that the consumption of viands and their accompaniments was on the following scale:—

guished, leaving the wondering dancers to the light of the cold moon and one lone star? There is only one waltz for such a time. "The Merry Widow" took on new beauty at the hands of the orchestra.

It is by no means strange that other organizations have paid Macdonald College the compliment of attempting to reproduce this magic.

The Committee with commendable insight, made provision not only for the dancers but for those who enjoyed

even more (at intervals) the feast of reason and the flow of soul. Those Rendez-vous! More than one has since risen to call down blessings upon the most thoughtful and intelligent decoration committee.

For the information of posterity the names of the Committees are here appended.

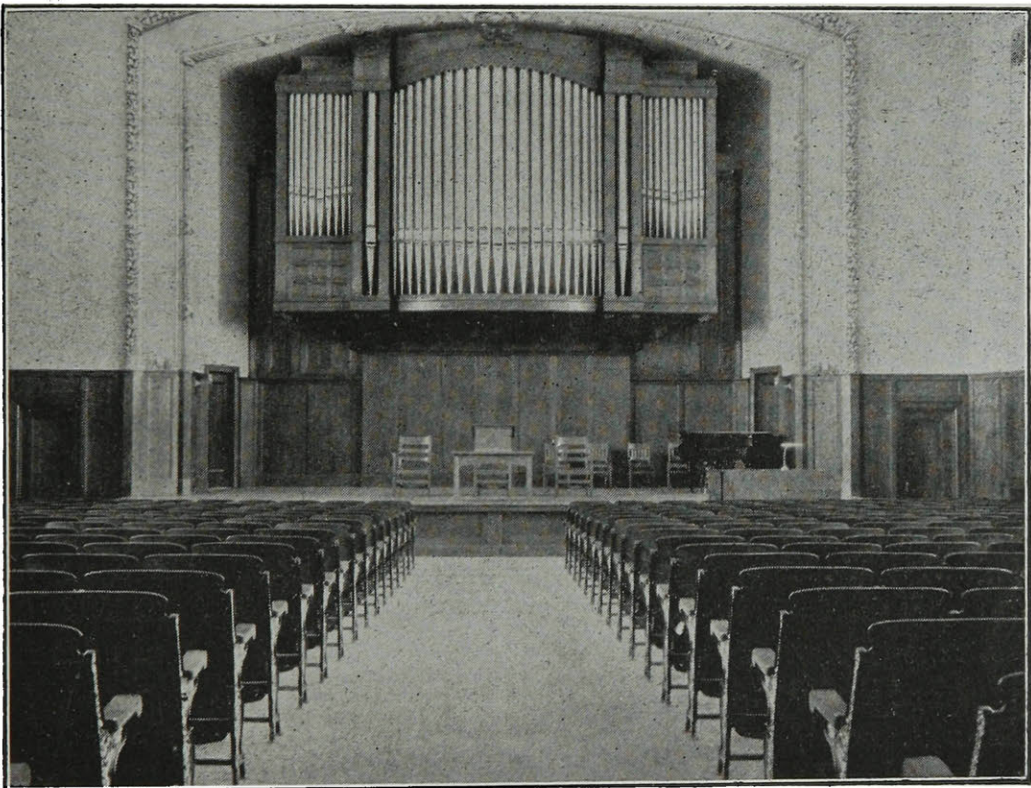
Entertainment, Mr. Weir, chairman; Messrs. Logan, Grindley, B. Flewelling, McBean, Smillie and Gibson. Decora-

from the various Faculties and organizations of McGill.

ASSEMBLY HALL NEWS.

Since our first number went to press the College has, on several occasions, been interested by addresses or enlivened by entertainments given from the platform of the Assembly Hall.

On February Professor S. Leacock, of McGill University, gave an ex-



THE ASSEMBLY HALL, MACDONALD COLLEGE.

tions, Mr. Cutler, chairman; Messrs. Savage, Rhoades, Robertson, L. C. Raymond, Dash and Ross. Refreshments, Mr. Barton, chairman; Messrs. Summerby, Buck, K. Fiske, Campbell, Ogilvie, and Calhoun.

Besides the students of the College, nearly all the members of the Staff were present, as well as friends of the College from the village of Ste. Anne and vicinity. There were also present representatives from sister Colleges and

tremely well delivered address on Citizenship. The College listened to the lecture with interest, and regretted only that it was so short.

A second most successful evening was that occupied by a lecture, illustrated by lantern slides, on Forestry, by Dr. Sinclair, Dean of the School for Teachers. Dr. Sinclair, who is an enthusiast on this subject, demonstrated with great force the folly of our present policy with regard to the world's timber. This address

will undoubtedly be productive of much good.

Under the auspices of the College Literary and Debating Society, a Mock Trial for Breach of Promise was held on March 12, and caused much merriment. The "injured plaintiff" was Mr. Hayes, who made an efficient girl. The speeches of the opposing counsel, and the cross-examination of the witnesses, were very amusing.

The Society's next meeting was taken up by a debate. Mr. Halliday and Miss Tanner, who were opposed by Mr. Lothian and Miss Wales, contended that the spelling of the English language should be reformed. All the speakers did well, and the judges announced that by a narrow margin of points the affirmative had the advantage.

MODEL CLASS EVENING

The forms which our "Model Class evenings" took were varied. One evening was devoted to a debate. The subject debated was—"Resolved that it is advantageous for the boys and girls at Macdonald College to sit together in the dining-room." The leader of the affirmative was Miss G. Pope, seconded by Miss L. Gilbert, and the leader of the negative was Miss Agnes Clouston, whose second was Miss Gretchen Bailey. The debate was both amusing and interesting. The decision was in favor of the affirmative.

Another evening the beautiful moonlight tempted the class to forget their literary inclinations, so at 6.45 the College sleighs left the girls' residence with the precious load of eighty teachers-to-be, who forgot their natural reserve for the "time being" and sang all the evening, with College yells intermingled for the sake of variety.

Oh! how we all quaked on the evening of the stump speeches, and what a groan was heard as each victim read her subject. However many waxed eloquent as the subjects were **quite local**.

Altogether our model class evenings have been a great success and very much enjoyed.

E. B. S.

THE ELEMENTARY CLASS RECEPTION.

Perhaps the most successful reception given in the Girls' building was that by the class of Teachers 1911, on January the twenty-second.

Mrs. Muldrew and Miss Jean Hogg, the Class president, received in the gymnasium, which was decorated to suit the occasion.

First came some guessing games. In one each element represented some well-known book. Dainty refreshments were then served.

A short entertainment was arranged for after supper. Both Madame Cornu and Miss Peebles favored us with solos. Next was a tableau entitled "The Professor's Dream." It represented what this bachelor professor saw the night before his wedding. One by one his **old loves**, from the school-girl to his bride of the morrow, stepped into view, and remained there while the professor, in his college cap and gown, related his reminiscences—where, how, and when he had met them, and all their perfections, till one was inclined to think that "It was roses, roses all the way" with him. The class medley, sung with a great deal of spirit, ended the programme.

Mrs. Muldrew presented the prizes. The first prize was won by Mr. Bates, and to Mr. Elwell the booby prize (a bottle of "catchup") was awarded.

E. B. S.

AN EVENING WITH THE HOUSEHOLD SCIENCE CLASS OF 1910

Dependent, as we are, at Macdonald College, on our own efforts for amusement, it is customary for each class to give an entertainment to the College, during the Session. On the evening of February 26th the First Year Household Science made their contribution.

The central feature was a bright little three-act comedy, called "Maidens all

pretty, vivacious girls are being kept by anxious mothers, away from dangerous flirtation. They are chaperoned by an elderly maiden aunt whose mind is averse to men, being "fixed on higher things."

Human nature revolting, one of the girls writes to a boy friend, begging him to come to see them and relieve the monotony. He answers, saying that he himself cannot come, but that a young



THE COLLEGE DINING HALL.

Students at Dinner.

Forlorn." The cast, all of whose members looked and acted charmingly, was as follows:

Elizabeth	} cousins.	H. Bremner.
Maude		E. Trenholme.
Bertha		M. Rutherford.
Aunt Louisa		M. Shepherd.
Mrs. Maloney, landlady,		
of Shorley Cottage.		

Jocelyn Denby, M.D.	A. Scarff.
	H. Christie.

The scene is laid in a cottage in a "man-forsaken" village where three

and handsome doctor, a friend of his, is coming and will compensate.

Great excitement ensues. They prepare for the arrival. One girl searches out a medical book to study, one flies to the kitchen to make a cake, the other gets her silks to make a cigar case. Even Aunt Louisa adjusts her mind to this lower level.

The morning of the visitor's arrival witnesses a strange coincidence of accidents. The studious girl sprains her ankle in reaching for her book. The

needle worker is in great pain from a needle-prick, while the domestic girl bears a badly burned arm. It is seen that medical attendance is in immediate requisition. With the excitement at a climax, in walks the young and handsome doctor, a young woman!

Mrs. Maloney, the Irish landlady, fairly captured the hearts of the audience.

Miss Bremner sang charmingly during the first act, and was encored. Other music given between the acts, was a piano solo by Miss Sellar, and a duet by Miss Bremner and Miss Van Duyn.

At the end, the girls of the class came on the platform in uniform, and sang their class songs, which undoubtedly scored a success.

The evening was concluded by an adjournment to the gymnasium, prettily decorated with plants and flowers. Here light refreshments were to be had.

A guessing game, answered by the names of magazines, was played and prizes given.

RELIGIOUS WORK AT THE COLLEGE.

At no time has there been a clearer conviction that religion and education are indispensable to each other, than in the present day College life. The close kinship of religion and education is widely recognized. Each has as its objective the growth of every individual into as strong, as complete, and as effective a personality as possible. Recognizing its value, the students of Macdonald College early organized Christian Associations, seeking to develop to its fullest degree each one's capacity for appropriating the best and worthiest of life's values.

Under the instruction of members of the Faculty, the Girls have taken up

Association Bible Study work, and are making good progress towards furthering religious training among their numbers.

The Men's Christian Association is characterized by keen interest among its members. Its meetings are held weekly and have an average attendance of nearly one half the entire Student body. The speakers are mostly men from the College Staff, and visiting clergymen, and their addresses have been both interesting and instructive. They are always followed by open discussion.

The active interest of the Students was shown by sending four representatives to the Student Volunteer Convention held at Rochester, N.Y., and the reports given by the returned delegates showed that the Student movement in religious education is fast becoming world wide.

The officers of these Associations are as follows:—

MEN'S CHRISTIAN ASSOCIATION.

President,	F. E. Buck.
Vice-President,	K. M. Fiske.
Sec.-Treas.,	C. Sweet.
Musical Leader,	E. Rhoades.
Committee,	R. Summerby,
	E. A. Lods,
	W. Bond.

GIRLS' BIBLE CLASS SOCIETY.

President,	Z. Honey.
Secretary,	E. Blomeley.
Committee.	A. Clouston,
	J. Hogg,
	A. McCredie.
	J. Aird.

C. S.

THE ORGAN RECITAL.

Beginning Saturday, November 20, and continuing on each alternate week till February 12, a series of organ recitals

was given at Macdonald College by Mr. G. Harold Brown, assisted by Mrs. Wm. Blackbird, Soprano; Miss L. C. Clark, Contralto; Mr. R. E. Perrin, Tenor; Mr. Douglas Weir, Violin; Mr. E. R. Douglas, 'Cello, and Mr. H. L. Gnaedinger, 'Cello.

Selections were rendered from such musicians as Wagner, Chopin, Greig, Mendelssohn and Bach. The recitals were attended by large audiences and thoroughly enjoyed by all.

THE INTER-CLASS DEBATES.

By J. M. SWAINE, M.S.A.

The benefit which a student derives from College life is not to be completely estimated from the record of his work in class room and laboratory. Many other opportunities for improvement present themselves, and among the chief should be placed the Class Debating Society. We have had three such in the School of Agriculture this year, and three inter-class debates as a natural outcome. Many who listened to these debates were surprised, I fancy, at the strength, the eloquence and the clear reasoning of the speakers. The credit for this excellent form shown in the Assembly Hall should be given to the Class Societies. And the credit is very considerable. Not a few of the speeches given in these debates would have done credit to an institution much larger and much older than is ours. Indeed we hope next year to have Intercollegiate Debates in the Assembly Hall.

The first inter-class debate was held on January 27th. Mr. Elwell and Mr. Newton, of the second year, upheld the resolution that "The rate of increase in the National Debt, during the past ten years, has been detrimental to the best interests of the

country." This was contested by Mr. Brittain and Mr. Savage of the third year. The affirmative submitted:—That national expenditure has increased more rapidly than the revenue; that if the excess of expenditure has not been profitably invested financial ruin must result; that such investment has not been made; that no sinking fund has been provided; that national credit has been impaired; that the present extravagant policy has an ill effect upon the morals of the people; and that the forced development of the country does not tend to produce the highest type of civilization.

The speakers for the negative held: That the prosperity and credit of the country have greatly increased, and this largely owing to the initiative of the Government; that the state of our finances was never so good; that national trade and prosperity have increased more rapidly than expenditure; that the national debt has been reduced per head of population; that the increase in the debt results from efforts to develop our resources, and that such investment will be profitable. They attempted to justify the expenditure of the various departments of the Government. The four speeches were excellent, and set a high standard for the series.

In the opinion of the judges the resolution was sustained, the affirmative winning by a margin of 4 points.

The second debate, between the third year and the first, was held on February 17th. The resolution discussed was: "That compulsory military service should be introduced into Canada." The third year supported the resolution.

Mr. Logan and Mr. Grindley, for the affirmative, argued along the following

lines: That the Empire's military authorities are in favor of such a system; that, in view of the weaknesses of our present system, the ever present danger of war renders such a scheme necessary; that the benefits, physical and otherwise, of such a system would be great and far-reaching; that the expense would be but little greater than that of our present system; that compulsory systems have been eminently successful elsewhere; that we owe it to the Empire to defend our own shores, and to be able to render assistance over-seas.

Mr. Bond and Mr. Gorham, for the negative, endeavored to show: That Canadians would never submit to compulsory service; that our great extent of country and small population renders such a scheme impossible on account of the expense in men and in money; that such a policy would prove a great hindrance to immigration; that the present good feeling between Canada and the United States would be endangered; that we should support the Navy and cannot afford both, and that the country's safety could be better ensured by a strong navy, and adequate coast defences supported by a small but efficient army. An alternative scheme, along the lines of military training and schools, and the supporting of rifle clubs, was submitted.

The judges decided in favor of the affirmative, giving them a margin of ten points.

The last debate of the series was held on March 10. The resolution discussed was: "That the Canadian Government should own and operate the railways." Mr. Kennedy and Mr. Lods, of the second year, supported the resolution; Mr. McOuat and Mr. Cal-

houn, of the first year, spoke for the negative.

The arguments of the affirmative were—in chief: That Government Ownership would result in economy of operation and building; that there would be no needless duplication of roads; that the money now given in subsidies would be invested for the people; that the development of the country would be under more definite control; that harmful discrimination would not obtain; that exports would be directed through Canadian channels; that richer communities would help support roads for sparsely settled districts; that rates would be kept at a lower level; that all gains could be applied to the lowering of taxes; that Government regulation has proved inadequate; and that the history of the I.C.R. and of European Government roads supported their argument.

The arguments of the negative were: That the development of the Canadian West has been largely due to the enterprise of private roads; that our private roads have been operated successfully and efficiently and with lower rates than those of European Government roads; that our private roads are more efficient than the European Government roads; that Government employees, as a class, are less efficient and less trustworthy than those of private enterprises; that Government interference in commercial life is undesirable; that great sums would be wasted in graft and political corruption; that the Government could not provide the money for the purchase of the roads.

The decision of the judges was given in favor of the negative with a margin of seven points. The debates were held under Intercollegiate rules of

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The "Aggie."

Debate. The judges were Dr. Harrison, Prof. Lochhead and Dr. Sinclair.

The great interest taken by the College in this series, and the creditable speeches given by the contestants should be very encouraging to those supporting

the Debating Societies of the years. It is to be hoped that all students will correctly appreciate the value of a training in public speaking, and will take advantage of their opportunities in connection with their year Society.

The Pilgrimage of a Household Science Hamper.

Theodora Thamaway was gaining stores of knowledge
By taking up the Science course, here at Macdonald College.

Theodora lived down East;
Four hundred miles or so, at least;
And so, when Christmastime came round,
Theodora sadly found,

And wrote home in a letter bedewed with many a tear,
That though it broke her heart she'd have to spend the
Christmas here.

II

She resolved to send a hamper to the dear old folks at home,

With lots of cakes and presents and the making all her own.

With a saucepan in the left hand and a note book in the right,

She cooked and sewed and cooked for days and packed that hamper tight;

She tied it and addressed it,
And joyfully "expressed" it.
As the little Hemlock flower
Knows not its deadly power,

So, with many kind and gentle thoughts she launched it on its path.

She knew they'd all enjoy it—but forgot the aftermath.

III

The Station agent's name was Jones; and Tom, his little son,

While playing round the hamper, found the knots had come undone;

He told his dad, who quickly came
To save the things it might contain.

A Demon on his way to—a distant place,
Tempted Jones, who weakly fell.

He stole a tart—Tom's mouth was wide—Jones popped the deadly thing inside;
And Jones was hung for murder, when little Tommy died.

IV

His assistant got the hamper on the train to Montreal
Where a bad and careless brakeman cracked the thing against a wall,

Then peering through the break,
He espied a piece of cake,
And ignoring moral right
Pulled it out and took a bite!

The insurance people would not pay although his widow tried,

They denied it was an accident and called it suicide.

V

A Herculean porter tried to take it from the train,
200 lbs. and more he weighed but could not stand the strain;

The veins were knotted on his head
To lift that Household Science bread.
But probably it was the cake
Which really caused his back to break.

They bore him slow and sadly to his happy little home.
And the Company erected a lovely marble stone.

VI

His fellow porters pluckily determined they would win
And twenty of them took a chain and brought that hamper in.

Within five hours that box was laid
With seven heavy pulleys' aid,
Upon an extra heavy car
And taken to the G. T. R.

They used up fifteen horses to get it to the station.
Their hides were tanned, their skeletons were used for demonstration.

VII

They sent that mighty hamper o to Moncton, on a freight,

But before it got to Chatham it was fifty hours late;

The car gave way beneath it; it broke beneath the strain;

The hamper crashed right through the floor and wrecked the wretched train.

Another train from either way

Reached where the pile of wreckage lay;

The end in each case was the same,

Two terrible collisions came.

The freight and cars and rails were in a thousand pieces rent

But the Household Science cookery had hardly got a dent.

VIII

Then suddenly poor Theo woke, and let a piercing scream,

Her limbs were cold and trembling from the realistic dream;

And when she thought it out upon the ensuing morning,

She decided that the nightmare was a celestial warning
'Gainst giving to the Faculty all the dainties she prepared,
Without once thinking how the more deserving students
fared.

"For look," thus Theodora thought,

"They do not prize it as they ought.

There's one I know, most likely takes

Our cooking, puts it into plates,

And having next inoculated,

He waits till it is incubated,

And looks through lenses till he sees

Some Bacilli Aerogenes.

Another puts it, I should think,

Into a test tube with some zinc,

He shakes it up and puts in then

Sulphuretted Hydrogen.

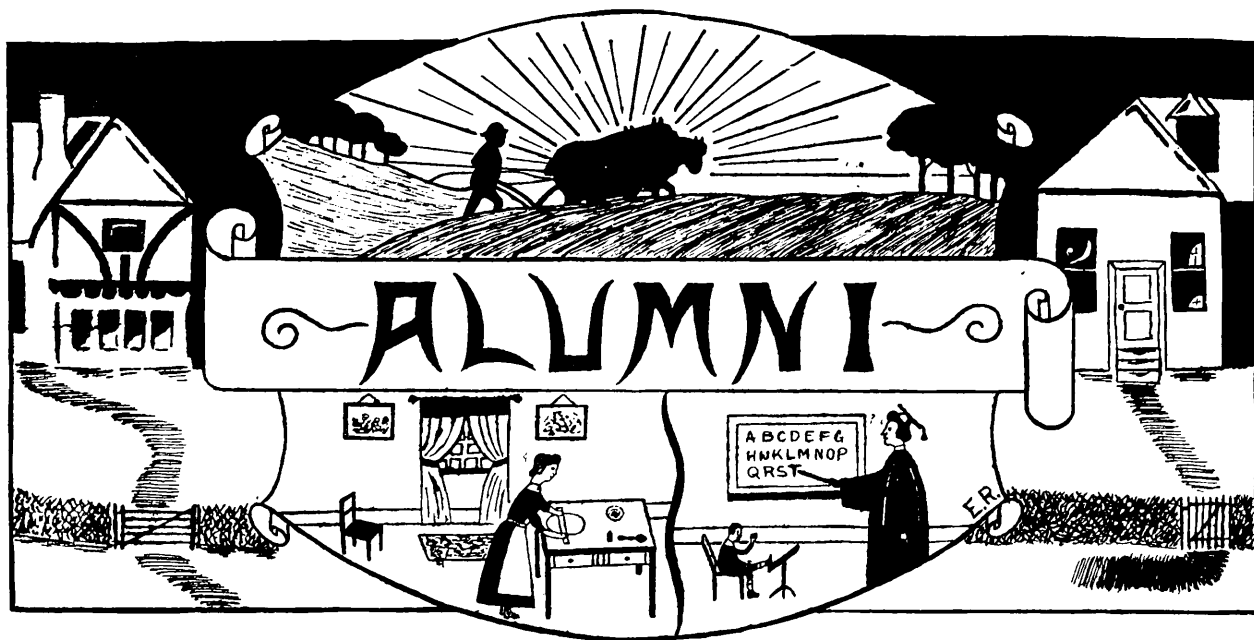
It puzzles me to see just how

I've only realized this now—

But there are many things at College,

Puzzling things beyond my knowledge.





Some correspondence has already taken place between the Editors on the one hand and former students on the other, as to the advisability of forming an Alumni Association. While all the correspondents have been in favor of such an Association, there is some unwillingness on the part of each to take the initiative.

Moreover, one Class, Household Science '09, has formed an Association to look after the interests of the Class when it returns to Convocation in 1911. That Convocation will be an occasion of more than passing interest in the history of the College, and it is likely that very many students other than those belonging to Household Science '09 will attend. It will be apparent, therefore, that for all of these, be they teachers, home makers, or farmers, some kind of organisation will be necessary in order that they may get all they can out of the re-union.

While it is somewhat without the province of present students to interfere in the organisations of past students, it is yet

recognized that the COLLEGE MAGAZINE, and in particular the Alumni Columns therein, will be the organ of any such Association. The Editors, therefore, have invited Mr. W. Logan, Alumni Sub-Editor for the School of Agriculture, to act as a General Secretary, and this he has consented to do. He will be pleased to hear from every one of the former students in regard to the matter of this announcement. The Editors trust that this arrangement will meet with general approval and that sufficient support will be forthcoming. It is specially requested that immediate attention be given to this so that an early start may be made.

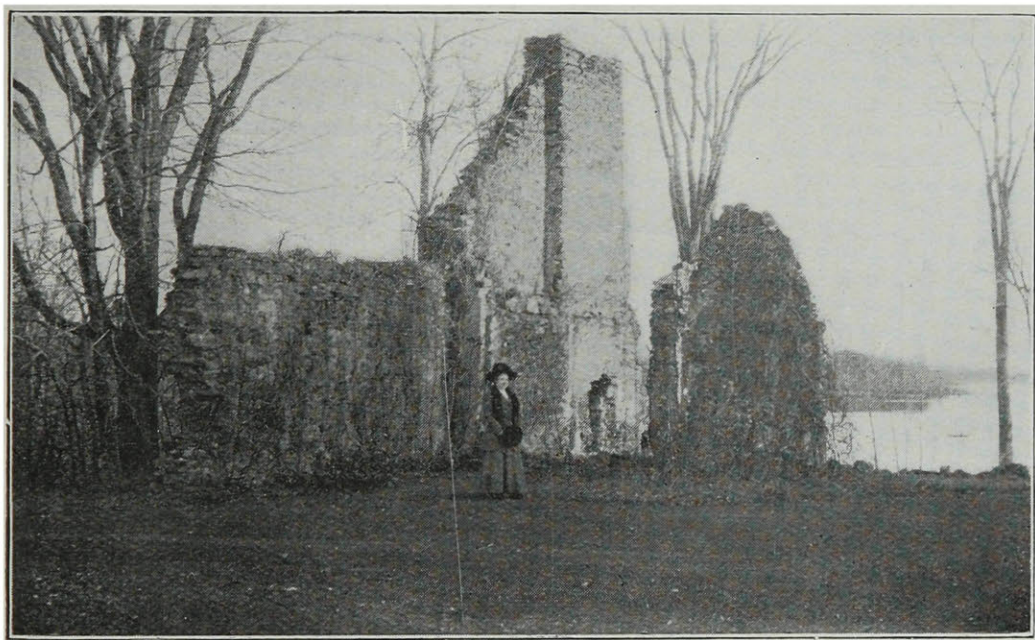
Roy B. Pipes called at the College and stayed for a few days on his way to attend the Jersey Breeders' Meetings at Toronto. He was Vice-President of the Tartan Literary Society in the first year of its existence, and continues to take a deep interest in its welfare. He is farming at his home at Amherst, N.S.

Journalism claims many alumni of Agricultural Colleges in this land of Agricultural enterprise. Lyle McLeod, a student of the first year at Macdonald, is our representative in that profession. He is on the staff of the Toronto "Telegraph."

Among the short course students of the spring of '08 will be remembered Miss Trench and Miss Marryat, who took the courses in Poultry and Horticulture. In company they started a poultry farm in Alberta which has

Macdonald College were not required to sign any "Three Years' Agreement" to teach. News has come to the Alumni Editors of the approaching marriages of several of the members of the School during the first year. Miss Charnock, formerly of East Angus, and now of Winnipeg, and Miss Learmonth, of Quebec, are among those who are about to enter into the state of matrimony.

Miss Gale has been at her home in Waterville, Que. It is understood that she has been connected with the publi-



THE OLD FORT AT SENNEVILLE.

been very successful. Last winter Miss Trench was appointed by the Provincial Government to lecture on Poultry and Poultry Keeping throughout the Province. She is now directing the poultry plant on the C. P. R. Demonstration Farm at Strathmore, Alta., while Miss Marryat still carries on the farm at Alix, Alta.

* * *

SCHOOL FOR TEACHERS.

It is well for the peace of mind of several people, at least, that the first students in the school for Teachers at

cation of the "Stanstead College Magazine."

Miss E. V. Moore and Miss Reynolds have had rapid promotion, each being now principal of an academy, the former in East Angus, the latter in Stanbridge East.

Miss Norma Fales, a graduate of the Model Class of '08, is teaching in Sherbrooke, Que. Her address is 14 High Street, Sherbrooke.

Miss N. Harling of the '08 Model Class is teaching in Westmount. The

College is favored with visits from her occasionally. Her address is 105 Cote St. Antoine Road, Westmount.

Several of the former students came back for the Masquerade, and to renew old acquaintances. Among the teachers were Miss Anderson, Miss Harling, Miss F. Powers, Miss H. Taylor and Miss Bradford.

The Misses Biltcliffe, J. Hatton, Oliver, Barr, and Powles, all of Model '09, are teaching in Montreal.

Miss Marie Gibaut, '08, and Miss McLellan, '09, are teaching in Quebec City.

Miss E. Manson, Elementary '09, and Miss McKenzie, Model '08, are teaching at Compton, Que.

Miss Flora Paul, '08, is teaching at Bishop's Crossing, Que.

Miss Dinning, '08, and Miss Cameron, '09, are teaching at Maplegrove and Rockfield, respectively.

* * *

HOUSEHOLD SCIENCE.

Miss F. McNeil, Class '09 Household Science, was President of the Bible Class in the Ladies' Residence while she was here and did much excellent work. Since she left College she has been following up mission work and is now head worker in the "Union Mission Settlement" in Ottawa.

On March 3rd, Miss Juniper gave a very pleasant afternoon tea to Class

'10 in honor of three visiting graduates of the year '09—the Misses P. Scott, Hall and Ogilvie. A very enjoyable time was spent.

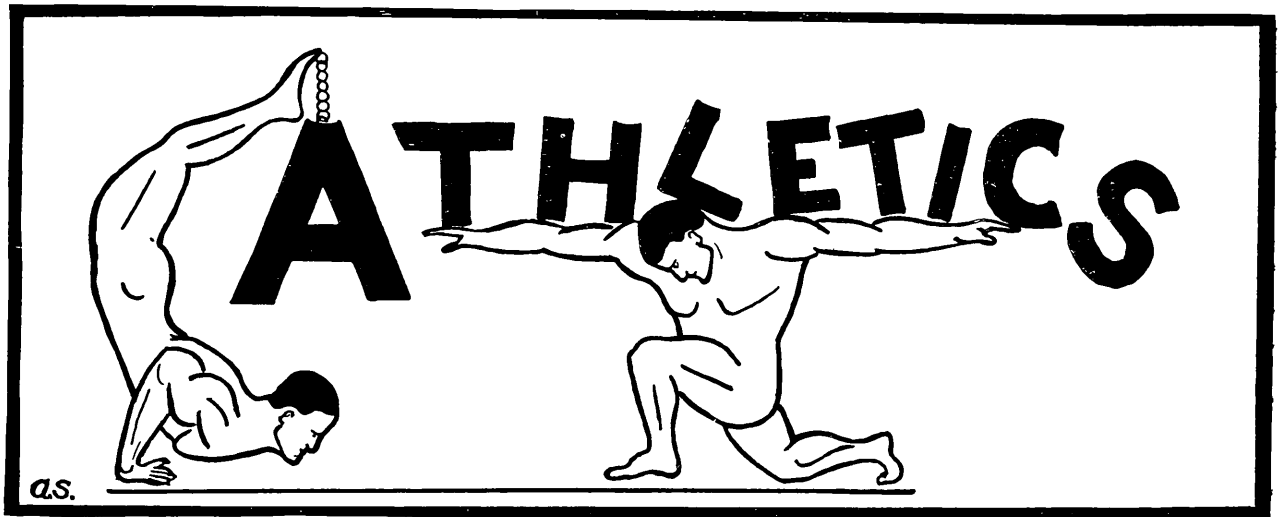
Miss Aline Pomeroy, President of Class '09 in its Second Year, has lately accepted a position in Ottawa, where she is doing good work, and bringing credit to her Alma Mater.

Miss Elda Smith of Class '10, who left Macdonald last spring, started into "bee-keeping" and has met with considerable success, which she hopes to be able to maintain.

Miss Rhoda Meiklejohn is teaching in a private school in Quebec. Miss Meredith Wadsworth also is teaching in Westmount.

At the Masquerade on March 4th, many former Household Science girls appeared in fancy dress, among whom were Miss Dowie, Miss Ewing, Miss F. Trenholme, Miss P. Scott, Miss Hall, Miss Ogilvie, and Miss Nellie Trenholme, who was President of her class last year.

The marriage of Miss A. S. Gentles, of the Class of '08 Household Science, to Mr. N. E. Jack of Chateauguay Basin, took place on Tuesday, March 22nd. On Wednesday, March 23rd, Miss A. C. Blackwood, of the same class, was married to Mr. A. H. Oliver, L.D.S., D. D.S., of Huntingdon, Que. We extend to these Alumnae our greetings and well-wishes.



The Athletic Association.



THE MACDONALD COLLEGE Athletic Association has, since the time of its formation two years ago, held an important position among the organizations of the Student Body.

The objects of this Association are to encourage athletic sports, to promote physical culture, to maintain an amateur standing, and to provide rational amusement and recreation for its members.

Its members consist of, first, regular members, including all male students enrolled at the College who have paid the annual fee; secondly, honorary members, comprising officers of the College, and thirdly, those accorded the honor of honorary membership by the Association on the recommendation of the Executive Committee.

The officers of the Association are elected annually from the Student Body and the Faculty.

Those holding office for the present College year are as follows:—

Hon. President, Dr. Harrison.

Hon. Vice-President, Mr. Barton.

Hon. members, Dr. Todd, Dr. Sinclair, Dr. Walker; Messrs. Cutler, Bates, Vanderleck, Monroe, Weir, Powter and Doig.

President, C. M. Spencer, '11.

Vice-President, A. Campbell, '12.

Secretary, R. S. Kennedy, '12.

Treasurer, Alf. Savage, '11.

Year Representatives, Grisdale & Innes, '11; Baird and Ness, '12; McLagan and Gibson, '13.

Managers and Captains of the different games are likewise elected from the Association. They are as follows: Indoor Baseball, Mr. Cutler, Mgr.; A. Campbell, Captain.

Basketball, Mr. Bates, Mgr.; Mr. Durost, '12, Captain.

Association Football, F. H. Grindley, '11, Captain.

Rugby Football, R. S. Kennedy, '12, Captain.

Hockey, Mr. Monroe, Mgr.; Mr. Barton, Coach; A. Ness, '12, Captain.

Last term the Athletic Association arranged games of Association football and basketball with outside teams, as well as practice games among its members, held an annual Field Day to furnish competition in the different outdoor events, and also arranged an Athletic Concert in connection with the presentation of prizes, as a means of amusement for its members and their friends.

The Association football team, captained by F. H. Grindley, deserves special notice, having won all games

great amusement for the onlookers. The winning team was captained by Bob Summerby of '11.

Too many thanks cannot be given Dr. Robertson and other members of the Faculty for so ably assisting the Association, and it is in a large measure due to the help they gave, financial and otherwise, that the Association holds such an enviable position among Student Organizations of the College.

BASEBALL.

Probably no game is more generally played and enjoyed by the



THE EXECUTIVE OF THE ATHLETIC ASSOCIATION.

played, with the exception of two, which resulted in draws. While the basketball team did not meet with such success in its first game, yet since then it has done exceedingly well, as will be noticed in the article under the heading of Basket Ball.

During last term our energetic indoor baseball captain, Archie Campbell, arranged a tournament of eight teams, chosen from among the members of the Association. This tournament, in addition to furnishing excellent practice for the players, was a source of

Student-body than indoor baseball. Stimulated by a very successful tournament held during the Fall term, and continued after Christmas by a series of inter-year games, we have been able to develop a College team that will be hard to beat. In their only game, that with Montreal Royals, they were victorious, with a score of 42 to 9. Other games have been arranged with some of the best teams of Montreal, Ottawa, etc., and great hopes are placed on our success. Mr. Cutler (manager), and Archie Campbell (Capt.), have

worked hard and steadily, and now look with satisfaction on the fruits of their labors. The inter-year games have been of intense interest to those who were able to witness them. The last game of the series has just been played, resulting in a victory for the Juniors over the Sophomores, thus making a three-cornered tie and the necessity of future games to decide the winners of the shield presented by Dr. Robertson.

The schedule of the inter-year games was as follows:—

Feb. 7—Freshmen vs. Sophomores, won by Freshmen, score, 26–25.

Feb. 16—Freshmen vs. Juniors, won by Freshmen, score, 13–11.

Feb. 23—Juniors vs. Sophomores, won by Sophomores, score, 24–11.

Mar. 7—Sophomores vs. Freshmen, won by Sophomores, score, 44–12.

Mar. 9—Freshmen vs. Juniors, won by Juniors, score, 49–26.

Mar. 16—Juniors vs. Sophomores, won by Juniors, score, 30–10.

Probably the most exciting exhibition of ball was witnessed in the game between the Freshmen and Juniors on February 16. Bond's pitching for the Freshmen was excellent, while Summerby for the Juniors was fully his equal; some of the fly catches of these men were simply wonderful and called forth bursts of enthusiasm.

In the last game of the series, that between the Juniors and Sophomores, a great deal of interest was aroused. The Juniors led from the first and through the excellent pitching of Summerby, well held by Sweet, and the clever fielding of other members of the team, were able to more than double the score. The different years have been represented by the following men, in these games:

Juniors—Sweet, c.; Summerby, p.; Savage, 1st b.; Grisdale, 2nd b.; Innes, 3rd b.; Reid, Wood, s.s.; Williams, l. f.; Grindley, r. f.; Spencer, c. f.

Sophomores—Campbell, c.; Baird, Brown, p.; Kennedy, 1st b.; B. Richardson, 2nd b.; B. Flewelling, 3rd b.; Ness, s. s.; Dreher, l. f.; Raymond, r. f.; Robinson, c. f.

Freshmen—Rodden, c.; Creelman, Bond, p.; Smillie, 1st b.; Garceau, Ross, 2nd b.; Gorham, 3rd b.; Creelman, s.s.; McLagan, l. f.; Stewart, r. f.; Heustis, c. f.

Of the various players, Bond and Summerby are first-class pitchers and in-fielders. Campbell and Sweet are hard to beat behind the bat, while Kennedy has done excellent work on first. McLagan's fielding from left field and that of Ness and Creelman at short stop have been excellent. A great deal of uncertainty has been aroused as to the likely winners of the shield, each year seeming quite confident, and keeping in touch with the game by hard systematic practices in their spare moments.

The three-cornered tie mentioned above was overcome by the Juniors and Sophomores agreeing to play first and allow the Freshmen to take the bye. The first game was played on Monday, March 21, when the Juniors again defeated the Sophomores with a score of 30–10. This left only the Juniors and Freshmen in the race for the shield, but on the following Wednesday the Juniors again showed their superiority by defeating the freshmen with a score of 24–8, and thus winning the coveted shield for the successful year at Indoor-Base-Ball.

The College team played their second game on Sat., March 19, defeating the M. A. A. A., the score being 34–4.

These games were all of high standard and intense interest was shown, especially in the inter-year games.

**FINAL RESULT OF THE SERIES
IN DETAIL.**

Team.	Games Played	Won	Lost	Runs For	Runs Lost
Juniors	6	4	2	150	98
Sophomores	5	2	3	119	102
Freshmen	5	2	3	86	154

tained his men during practices and games. Although only three games were played, and the College defeated in two, they were all excellent exhibitions of hockey, and well enjoyed by the other students and spectators. It is hoped that in the near future the College will erect a closed rink, and thus eliminate the difficulties and lack of comfort to



COLLEGE HOCKEY TEAM, 1910.

HOCKEY.

Although the hockey season was short, and the disadvantages of an open air rink keenly felt, it was on the whole a fairly successful one. Soon after the holidays the fellows began to practise, and under the supervision of Manager Monroe and Mr. Barton (coach), soon gave evidence of good material. Alex. Ness (capt.) did a great deal in stirring up enthusiasm over the game, and credit is due to him for the able way he cap-

both players and spectators inseparable from an open air rink.

The games played with outside teams, with the respective scores, were as follows:—Students vs. Faculty Recreation Club. Score, Students, 1 goal; Recreation Club, 3 goals.

Macdonald College vs. Heathers of Westmount. Score, College, 0; Westmount, 1 goal.

Macdonald College vs. McGill Science, '11. Score, College, 11 goals; McGill Science '11, 1 goal.

BASKET BALL

Through judicious work on the part of Mr. Bates, the Basket-Ball manager, and the hearty co-operation of Capt. Durost and others interested in the game, the College has been ably represented in this line of sport. Durost and Smillie as forwards are hard men to cover, and well up in the art of quick and accurate shooting. Cooke plays a steady game at centre, while Kennedy

well able to fill any position on the team. Four games have been played, our team being successful in two, thus making the season a fairly creditable one.

We append a list of games played, with the results in each case:—

College vs. Junior Business Men. Score, College, 27; Junior Business Men, 20.

College vs. McGill Freshmen. Score, McGill Freshmen, 24; College, 11.



MEN'S BASKET BALL TEAM, 1909-10.

and Campbell are well worthy of the position of guarding the basket. The standard of the teams and the games played has been high, and the success attained by the fellows gives evidence of the hard and systematic work they have gone through in their practices. A number of the fellows, by hard work and interest in the game, were named as spare men. These were:—Ness, Boyle, Macdonald, and Fiske, all men

College vs. Fairmount Y.M.C.A., Score, College, 24; Fairmount, 22.

College vs. Fairmount Y.M.C.A. (Return Match). Score, Fairmount, 26; College, 9.

MACDONALD GIRLS' ATHLETIC ASSOCIATION.

Among Canadian students there are none who appreciate the benefits of Athletic life more than our girls at

Macdonald College, for nowhere are girls more encouraged to develop their taste for this side of College life. The importance of Athletics among the girls was fully realized by the founders of Macdonald College when they equipped our gymnasium so completely.

Not only in the gymnasium do we indulge in Athletics, for as soon as lectures are over, a stranger passing through our corridors might think that

seen on the ice with hockey sticks. No hockey team has been organized this year, but the girls enjoyed their Saturday mornings.

Once more the Swimming Tank is open. The whoops of delight the first day this spring that it was opened sufficiently indicated how glad we were.

Owing to the large number of girls who wished to play Baseball, they were divided into three teams, A, B, and C



THE GIRLS' BASKET BALL TEAM.

Macdonald College was developing Marathons, but a moment later the appearance of the characteristic hockey cap, sweater, and skates would explain all. The rink this winter has been a source of enjoyment to all the girls. After the lights had been put up we were able to enjoy the ice in the evenings as well as in the afternoons. On Saturday mornings our enthusiasts in hockey might be

and a series of games is being played. Miss M. Russell is the captain for Team A; Miss F. Scarff, for Team B, and Miss P. Scott, for Team C. The results of the games so far are as follows:

	Won	Lost	To Play
C—	2	1	1
A—	3	1	0
B—	0	3	1

The Royal Victoria College Basket Ball team came out on January 15. They defeated us with a score of 18-11. At half-time the second teams of both Colleges played, which resulted in another victory for R. V. C. The following Saturday, January 22, our first and second teams in Basket Ball went to Montreal to meet the same opponents in the return matches in the High School Gymnasium. The first match resulted in a victory for Macdonald College with a score of 14-8. Our second team was again beaten. The results of the first team matches send Mlle. de Vercheres to the R. V. C. for another year.

This year the big "M's" among the Basket Ball girls have been won by Miss H. Christie, Miss J. Collins, Miss L. Al-

Miss F. Petts, Miss E. Blomeley, Miss E. Cowan, Miss D. Petts, Miss M. Scott, Miss J. Buchanan and Miss G. Harling are those who have won small



CLASS 1911 BASE-BALL TEAM. WINNERS OF THE INTER-YEAR SERIES '10



THE GIRLS' BASE BALL TEAM.

guire, Miss L. Nichols, Miss H. Moore, Miss B. Reichling, Miss J. Aird and Miss E. Foster.

"M's" in Basket Ball.

Both the Base Ball and Basket Ball girls are looking forward to the games we hope to play on the Girls' Campus this spring. In the meantime apparatus work keeps us busy in the evenings. Much enthusiasm is being shown over the competition which is to take place in May. Keener still is the enthusiasm in the preparation for our Gymnasium Closing Day, which for some of us will be our last at Macdonald College, but we can and always will remember our

gymnasium work with Miss Torrance, as well as the play-side of our athletic life while at Macdonald College.

IN LIGHTER VEIN

(Heard during Study Hour)—Sophomore—"Your neighbor seems to be quite a singer."

Junior—"I wish I had his voice."

Sophomore—"What would you do?"

Junior—"Drown it!"

* * *

Aspiring Freshman—(who has heard from home) "Are you fond of puppies?"

Science '11—"What a singular way you have of proposing! Yes, darling."

* * *

McClintock (admiring photograph)—"The facial features plainly indicate character and disposition. In selecting your girl were you governed by her chin?"

Sophomore—"No, but I have been ever since."

* * *

Freshman—"Hello, Bob. Heard the latest about Jenkins?"

Junior—"No. What is it?"

Freshman—"He's had a brain wreck."

Junior—"How did that happen?"

Freshman—"A train of thought passed through his head."

* * *

Miriam—(Before teaching a lesson on colors)—"Don't you pity me, girls? I've got to teach Brown in the kindergarten."

* * *

"Do you know," said Calhoun, "that my insomnia is worse now than it ever was before?"

"Indeed," replied his room-mate.

"Yes. I can't even sleep when it's time to get up."

Heard at the Masquerade—Elementary girl—"My cheeks are all on fire."

Junior—"That accounts for the smell of burning paint, I suppose."

* * *

Emily—"What makes you talk in your sleep?"

Hope—"It's the only chance I ever get in this room."

* * *

Prof. L.—"It is perfectly easy to look through the microscope with the left eye and make your drawing with the right eye."

E. R.—"Do you have your right eyebrow pencilled?"

* * *

At the Masquerade—W. L.—"What do you call your dog?"

Miss H.—"Aggie."

W. L.—"And what do you call him 'Aggie' for?"

Miss H.—"Because I love him."

* * *

Prof. Bates—(Lecturing on Electro Magnets)—"You will notice that the electro magnets attached to the bells in the corridors are very liable to spark across."

Inattentive Model Teacher—"What did he say?"

"He said the Model belles were very liable to spark in the halls."

* * *

Barber, after the shave—"Hair dyed, sir?"

Halliday—"Yes, it died about two years ago."

T.—“The girls tell me I am getting stouter all the time.”

D.—“Yes. When I picked you for a girl I didn't know I was getting one on the instalment plan.”

* * *

Innes—“Here's an article in this magazine called ‘How to meet trouble.’ Shall I read it to you?”

Critchley—“No. It's how to dodge trouble that I want to find out just now.”

* * *

“Now, ladies, tell me how you know an old hen from a young one?” asked Mr. Elford.

“By the teeth, sir,” answered Miss S.

“Oh, no; you ought to know that a hen has no teeth.”

“No, sir, but I have.”

* * *

If people only said what they thought there wouldn't be so much talking.

* * *

Prof. Kneeland (to the Model Class)—“Now, how would you punctuate the following sentence: ‘The beautiful girl for such she was was tripping down the street?’ ”

Brady—“I should make a dash after the beautiful girl.”

* * *

She—“Stop that at once.”

He—“Do you object?”

She—“Look here, I give you one hour to remove your arm or I report you.”

* * *

Elwell —(Fresh from England, in Montreal hotel, holding up mangled remains of cob of green corn)—

“Waitah—aw—will you—aw—put some more beans on my stick?”

Rhoades—(holding up to Elwell a newly finished sketch)—“How much do you think I ought to get for that?”

Elwell—(after critical inspection)—“Six months.”

* * *

“Ness,” said Lods, “that's the second time I've heard you use that expression ‘aching void.’ I wish you would tell me how a void can ache.”

“I say,” interposed Macfarlane, “didn't you ever have a headache?”

* * *

Innes—“Say, Williams, is your ‘wife’ very religious?”

Williams—“He was until the two Newtons started practising music in the next room.”

* * *

Doctor—“I don't think it is anything very serious, but you will have to stay in bed at least two weeks.”

Ross—“Doctor, do you know it costs a dollar a day to stay here?”

Doctor—“Yes, but I am a friend of the Bursar.”

* * *

Heard in the Summer months. Prof. B.—“This beetle paste doesn't seem to kill the beetles at all.”

Student Apprentice—“Oh, its properties are evidently not to kill the beetles at once but just to undermine their constitutions.”

* * *

Would-be Contributor (in Editorial office)—“Here's a joke that I'll guarantee was never in print before.”

Editor (after reading it)—“I don't doubt your word in the least.”

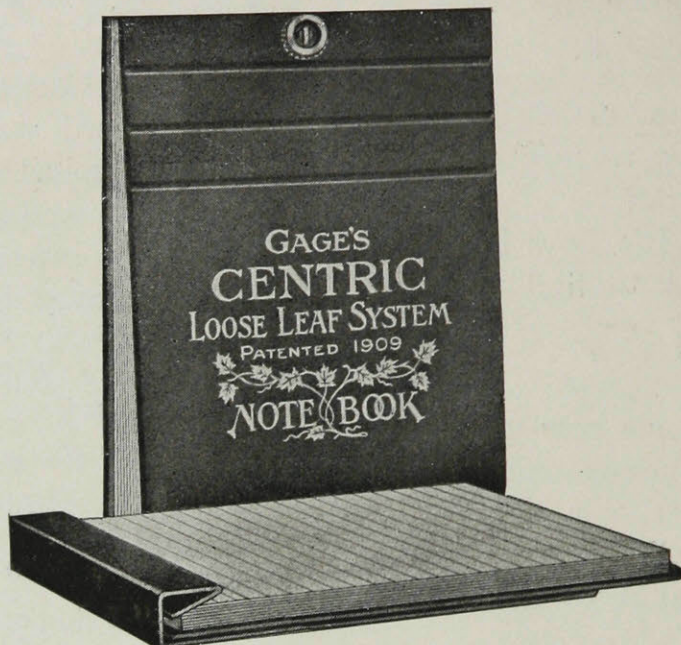
* * *

“Couple of fine room mates, aren't they? One of them is a fine singer, and the other cooks beautifully.”

Neighbour — “Yes, but there's a tragedy in this corridor. The one who sings thinks she can cook, and the one who cooks thinks she can sing.”

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Foreword.



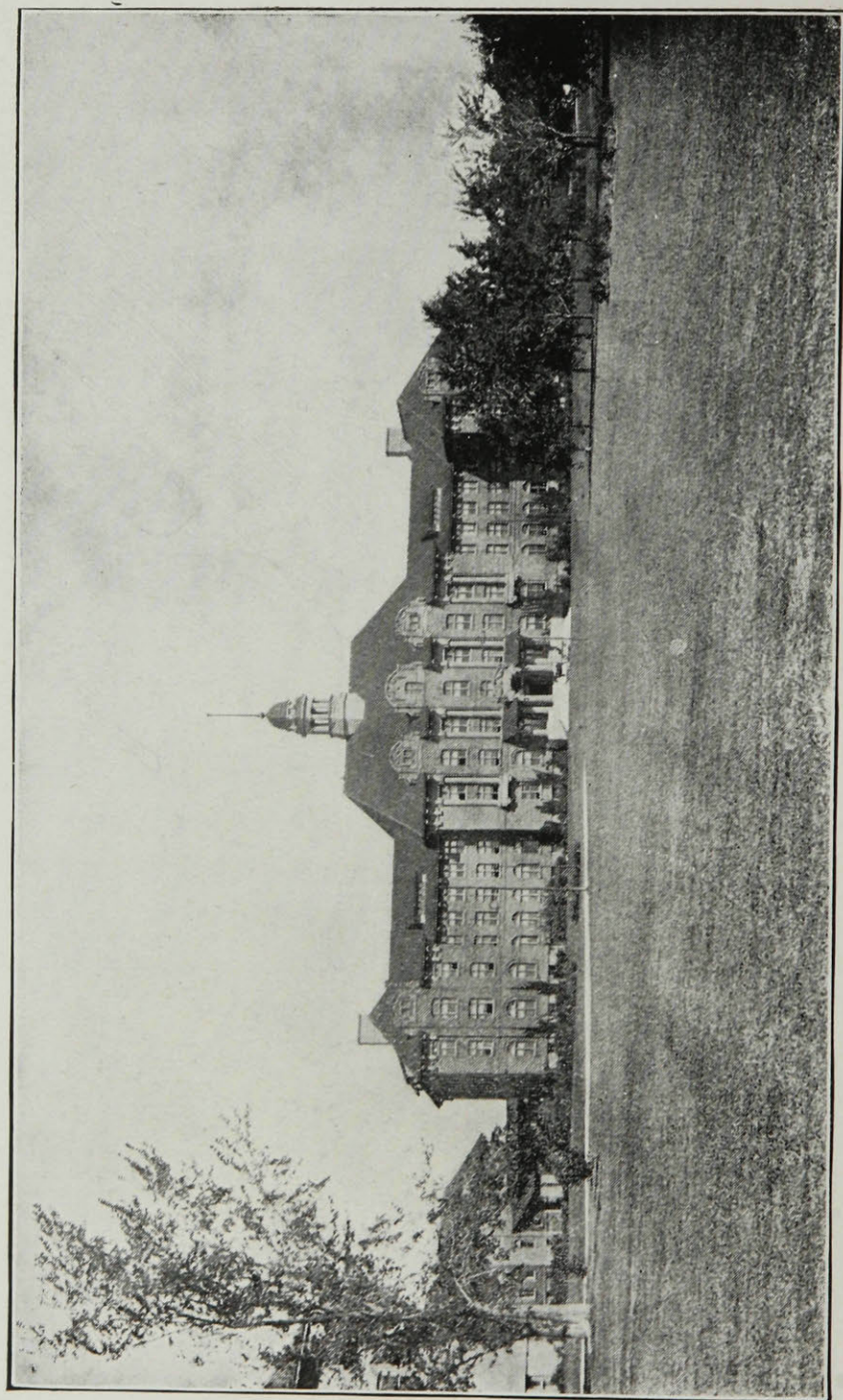
THE WORK of preparing the issue which we now have the pleasure of placing before our readers has been attended by some difficulties which had not to be encountered in Nos. 1 and 2. The greater portion of it had to be accomplished in the absence of very many of the Editorial Staff, and those responsible for its production were further handicapped by the very numerous changes in the ranks of the students, and by the lack of material for the Social and Athletic sections of the Magazine.

We trust, however, that on the whole the standard of the Magazine has been maintained in this number. The members of the new Editorial Staff, elected by the Students just before going to press, are, we are confident, well fitted for their respective positions. Moreover, as the Session advances, the literary and artistic talent which at present lurks undiscovered in the great body of new students will become known, and should help to adorn these pages.

As most of our readers are by this time aware, it is intended to publish four numbers of the Magazine during the present Session, of which this is the first. The second number will be published just before Christmas. The general plan which has hitherto characterized the Magazine will be adhered to, except that after this number the "Experimental" Section will be discontinued, experimental work both in this College and elsewhere being dealt with under the other sections.

It is earnestly hoped that the students will give ample support to the firms in St. Anne's, Montreal, and elsewhere, which have materially aided in the production of the Magazine by advertising in these columns. Advertisers cannot be expected to continue their support, unless they find that it at least proportionately increases their trade.

The Editorial Staff is sincerely grateful to the Faculty for valuable help in literary contributions, and in other ways, and to the students and other friends for their unswerving support, a support which it is anxious to justify.



THE MAIN BUILDING, MACDONALD COLLEGE.

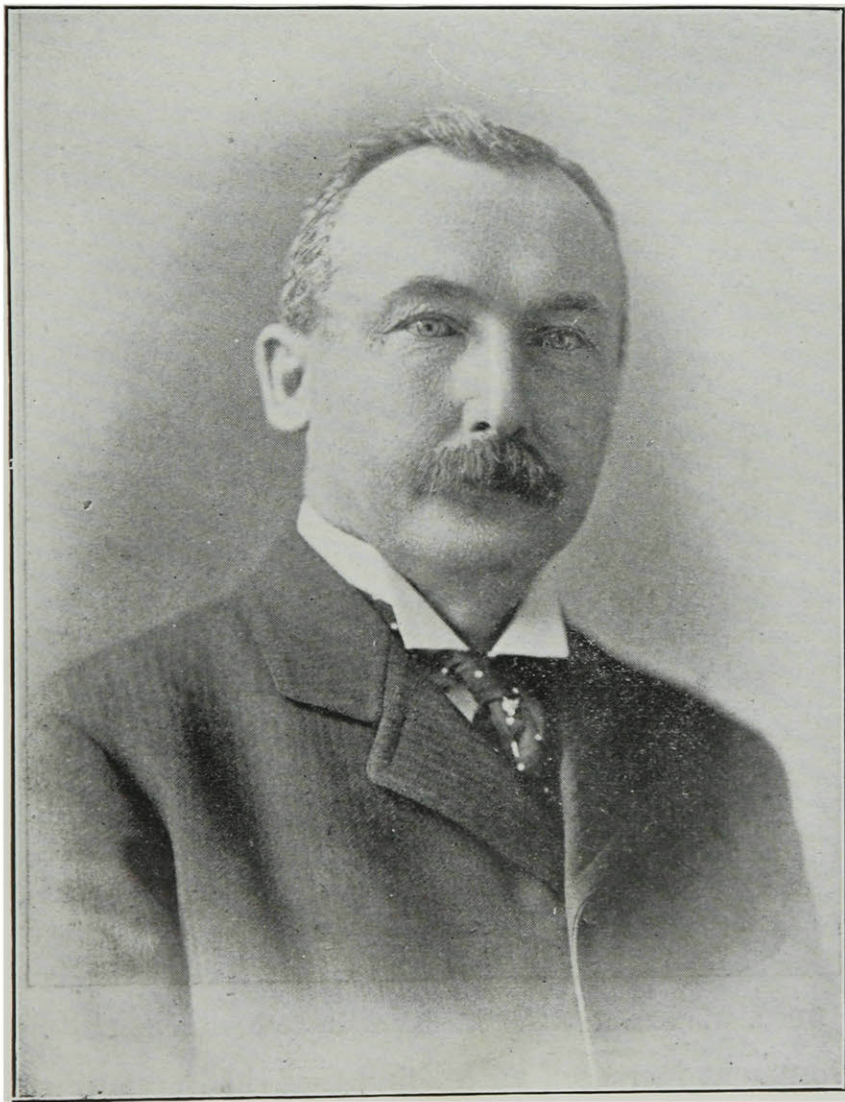
The Wider Vision.

By M. J. PATTON, Assistant Secretary to the Commission of Conservation.



EVER since man in the earliest ages began to exploit natural resources, conservation has been practised to a greater or less extent. The possession of sufficient intelligence to develop resources

productivity. The ancient tyrant's private game preserve protected by stringent laws against poaching, the gradual domestication of the wild animals that the semi-savage captured and tamed for a pet, the rude methods of primitive agriculture—all bear wit-



The Hon. C. SIFTON, Chairman of the Commission of Conservation.

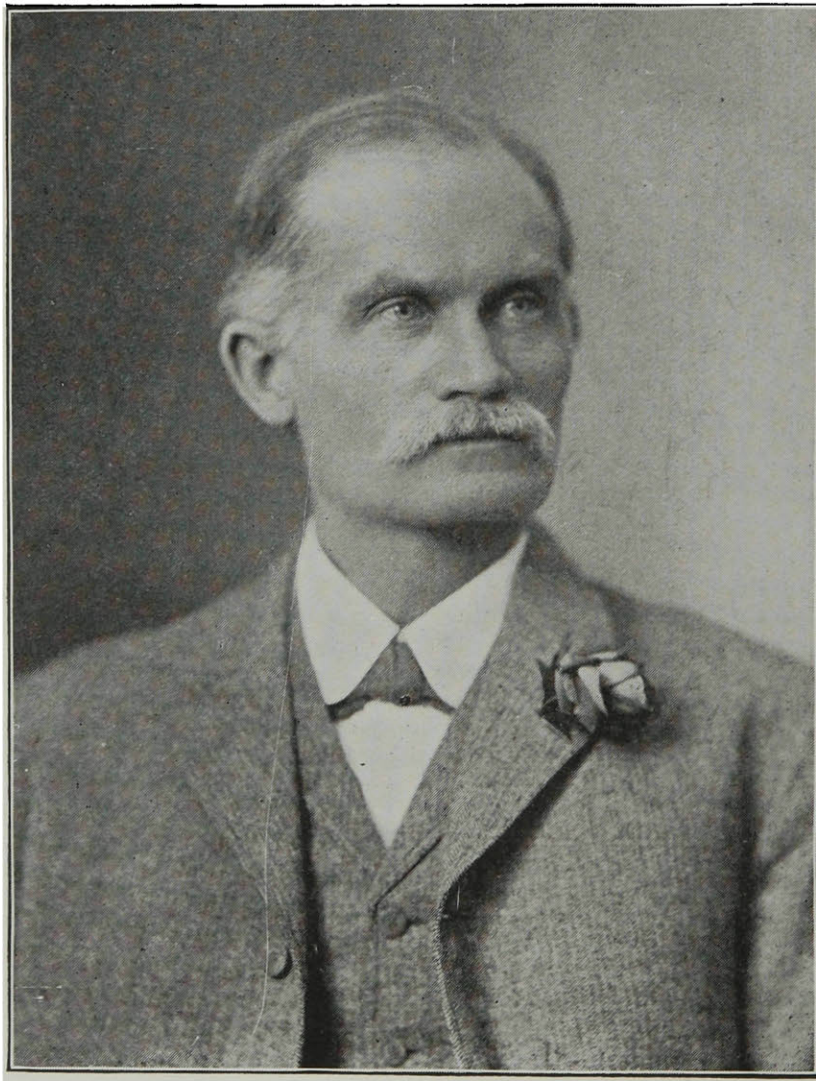
in itself presupposes the recognition that some of the sources of natural wealth are exhaustible, that the yield from others is capable of increase and that methods of exploitation differ with respect to their wastefulness or

ness to these facts. Development of natural resources implies their conservation; the two terms are logically inseparable, and conservation of the natural wealth of the earth, albeit unknown under its present-day name,

has existed from the very beginning of civilization.

Moreover, it has always been, to some extent, the concern of government. In nearly all the ancient codes of laws that have come down to us there are specific regulations for preserving that most essential natural resource, the public health. As the

of the New Forest by the cruel laws of Norman William; at other times, it was fostered by the genuine solicitude of a really benevolent and far-sighted despot for the well-being of the nation over which he ruled. In due time it took a prominent place in the realm of speculative thought. In the sixteenth and seventeenth centuries, we



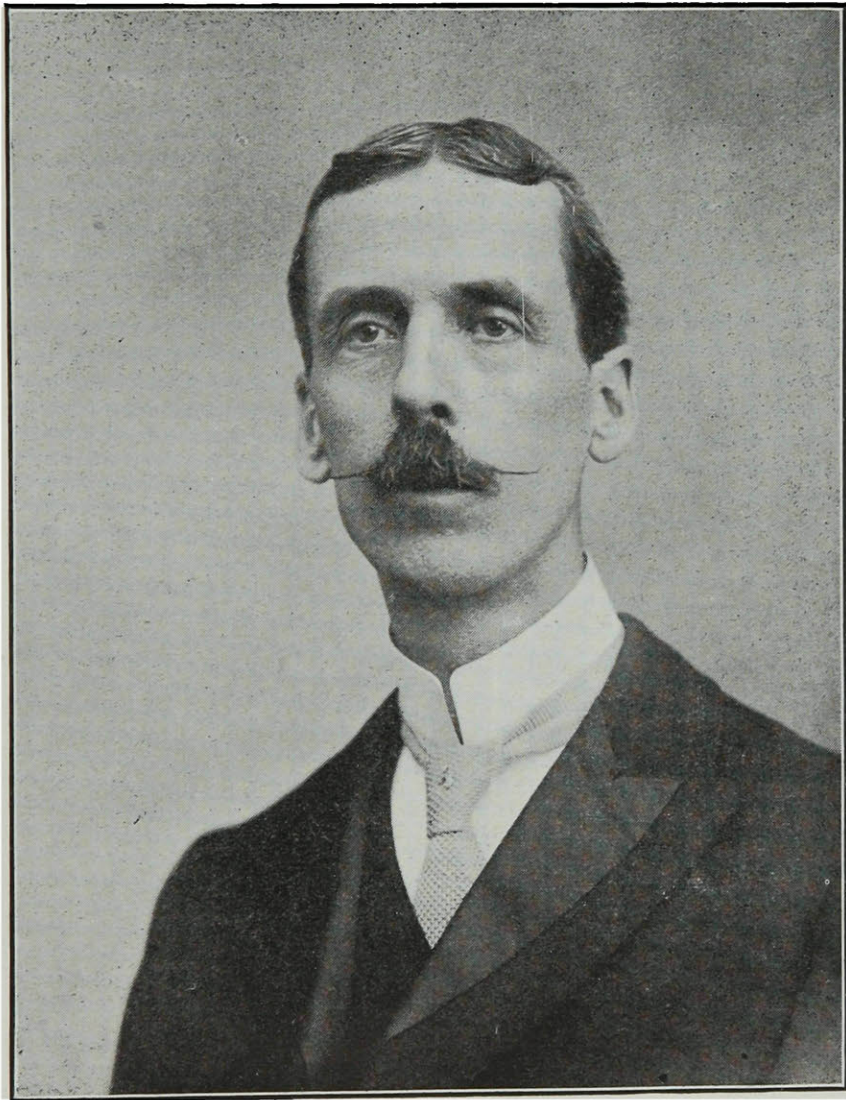
DR. J. W. ROBERTSON, Chairman of the Commission on Lands.

functions of government increased with the advance of civilization, the economic development of the sources of natural wealth became the subject of greater and greater attention. In the period of absolute monarchy, conservation was promoted sometimes by the selfish desires of an arbitrary ruler, as in the case of the preservation of the game

find that the Mercantilist school of political economists minutely specified how resources could best be developed and industries encouraged. The elaborate system of governmental restriction and direction of individual effort practised by the great French minister, Colbert, is without doubt the most striking example of the working out of the

tenets of this school. Later, in the teachings of the Physiocrats, the importance of the extractive industries, and especially of agriculture, was strongly emphasized. Indeed, wherever we scan the pages of economic history, we find conclusive evidence that the movement for the conservation of natural

tion of the past. Above all, it is more aggressive. And it is more aggressive because it is more conscious. The tremendous rapidity with which modern invention and world commerce sweep seemingly inexhaustible natural resources out of existence is observed by all. The practical exhaustion of



Mr. JAMES. WHITE, Secretary to the Commission of Conservation.

resources is by no means peculiar to the present day.

But while conservation is as old as civilization and has ever been the interest of government, it must be admitted that the present thoroughgoing North American conservation movement is to be sharply distinguished from the less obtrusive conserva-

some resources, the visible depletion of others, the monopolization of water-powers and the ever-increasing scale of commodity prices are emphatic reminders that the problem of conservation must be dealt with, and dealt with at once. Formerly it was only the speculative thinker or the great statesman who gave sustained attention to such mat-

ters. Now the man on the street as well as the careful scientist and far-seeing statesman is keenly alive to the fact that inexhaustible is a word not found in the dictionary of natural resources. The ubiquity of the press and the facility with which information is diffused has given each citizen a fairly comprehensive grasp of the problem of conservation both in its relation to the well-being and comfort of the individual and also to the efficiency of the nation. It is this wider vision that has caused the conservation issue to penetrate into every nook and corner of the population, and has so impressed the mind of the people with its importance that government could not say them nay when they said "This is our problem and you must deal with it."

In Canada, the exploitation of natural resources has not been carried to the same extent as in the United States. But the experience of that country has supplied us with a vivid object lesson of what will happen here should not adequate measures of conservation be now taken, and has been the immediate cause of the inception of an organized conservation campaign at a comparatively early stage in the development of our natural resources. We are in the unusually fortunate position of realizing the necessity for conservation when we have still much left to conserve.

The preliminary stages of the conservation movement in Canada may be briefly passed over. Acting upon one of the recommendations adopted at the North American Conservation Congress held at Washington last year, the Government of Canada appointed a permanent conservation commission with the Hon. Clifford Sifton as chair-

man. This Commission consists of thirty-two members selected from the most successful business men, scientists, educators, financiers, farmers and professional men in Canada. The Dominion Government, the governments of each of the Provinces, and the universities are represented. Mr. James White, who vacated the position of Dominion Geographer to assume the secretaryship of the Commission, is in charge of a staff of highly trained technical men at Ottawa, who carry out the investigations decided upon by the Commission.

Work was begun last January when the first annual meeting was held in Ottawa. To systematize the work, seven committees were appointed—one each for Mines, Forests, Lands, Waters and Water-Powers, Fisheries, Game and Fur-bearing Animals, Public Health and on Press and Co-operating Organizations. Each Committee is presided over by a chairman who, with the Chairman of the Commission, has power to employ special technical assistance for pursuing the investigations outlined by the Committee. By reviewing briefly some of the more important work that these committees are doing and have yet to do, we shall obtain a more definite idea of what the term conservation means when applied to Canadian natural resources.

To the Committee on Lands, of which Dr. J. W. Robertson is chairman, is confided the task of guiding the policy of conservation respecting this country's most fundamental and most valuable natural resource. The tentative programme for the work of the first year includes the collection of available statistics regarding areas of agricultural lands, both occupied and unoccupied, a preliminary classification

of these as to (a) soil contents and (b) adaptability for growing particular crops. The impairment of soil fertility, the supply and availability of natural fertilizers and the prevalence of dangerous weeds are other subjects upon which data are being collected. Not the least important of the topics that are being considered are those relating to the farm fuel and water-supply, the sources of light, heat and power for farm uses and the sanitary

inquiry is of a detailed nature, and as it is being carried out under the supervision of the officials of either the provincial departments of agriculture or the agricultural colleges, the results will undoubtedly give a fairly representative idea of the actual condition of agriculture in each province with special reference to soil fertility, the inroads of weeds and insect pests, farm sanitation and the prevalence of scientific farming as shown by the use of



A PIECE OF SWAMP LAND TYPICAL OF MANY PARTS OF QUEBEC—PICTURESQUE,
BUT USELESS FOR AGRICULTURAL PURPOSES TILL DRAINED.

conditions surrounding the farm home—in a word, the consideration of those factors which particularly have to do with making country life healthful, inviting and attractive.

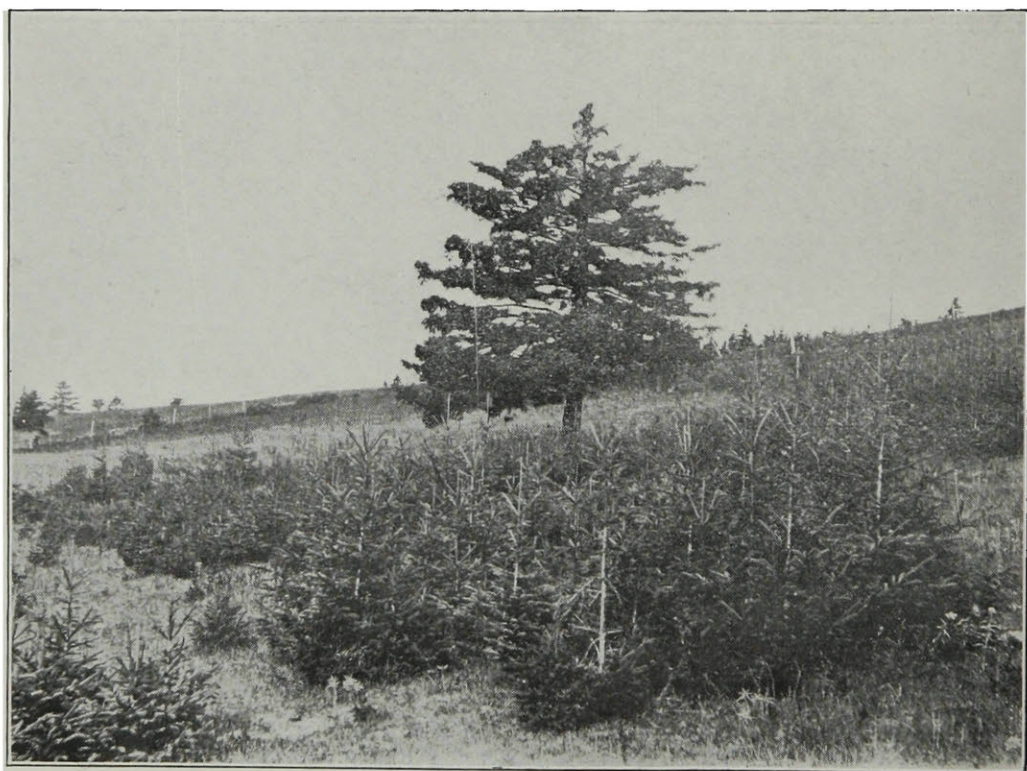
The means adopted to secure this information may be termed that of an agricultural census. In each province, the Committee of Lands has employed men to visit a hundred or more representative farms to tabulate on printed forms the information desired. The

crop rotations, the application of fertilizers and the practice of sowing selected seed.

The basic problem in the work of scientific agriculture is, without question, the retention and increase of the fertility of the soil. The rotation of crops, the cultivation of the soil; in fact, most of the operations of agriculture are undertaken to preserve and increase soil fertility. The results of the census now being taken by the

Committee on Lands will prove valuable in showing just what the attitude of the representative Canadian farmer is towards this very important problem. The most serious impairment of soil fertility is to be feared from the too exclusive use of the one-crop plan on the Western prairies where cereals have a decided preference over other crops. The failure of the crops to resist drought in many of the older settled Western districts, this year, has done much to

nence will be given to the preservation of soil fertility in Western Canada, we must not overlook the fact that the trend of events in the older East is surely pointing to similar results. Within the next twenty-five years, I believe we are likely to see an extensive back-to-the-land movement. This will be caused not only by rising prices, increase of population and stringent economic necessity but also by the attractiveness and comforts of life on the well-



NATURE'S METHOD OF BUILDING A FOREST. THE YOUNG PINES AROUND THE MOTHER TREE ARE FROM TWO TO SEVEN YEARS OLD.

convince the farmers themselves of the necessity of mixed farming and better cultivation. In the early stages of Western farming, exclusive growing of grain was almost inevitable, but now the extension and improvement of railway facilities and the steady influx of population will unite to give the tiller of the soil a better market for the products of mixed farming.

But if conditions are steadily shaping themselves so that more promi-

titled small farm. In Western Ontario the conditions are ripe for it now. The most decisive factor in bringing about this movement will undoubtedly be improved means of transportation and communication. The way in which the radial electric railway is transforming farm life in Western Ontario is truly remarkable. In the better districts, almost every farm has the rural telephone and with the extension of the good roads crusade and the rural

mail delivery system, the call of the healthful and beautiful farm with its inspiration of growing crops and pure fresh air will be irresistible to the dweller in the noisy, crowded, foul-aired city. As inevitable concomitants of this movement will be the smaller holdings, more intensive farming, and the greater application of science to agriculture. This means that the farmer must look upon his land as a permanent asset, the fertility of which can be increased by careful husbandry and which he can hand down to those who come after him as a more valuable heritage than when he received it. In the formation of this attitude of mind will consist the most valued contribution of our agricultural colleges, of such organizations as the Commission of Conservation and of the press of the country generally.

Mention of only a few of the outstanding features of the work of the other committees can be made here for each has a field of enormous scope to cover. The Committee on Forests is just now devoting a great deal of attention to the question of destruction of timber by forest fires. A recommendation has been made that railways be held pecuniarily responsible for fires started by their locomotives, unless it can be shown that the best modern appliances were used to prevent the emission of sparks and that the railway maintained a properly equipped staff of fire-rangers. The destructive forest fires of the past summer are being traced to their sources, and it is hoped that measures will be adopted to curtail the heavy losses incurred annually from this cause. The problem of reforestation is another one which should be dealt with as soon as possible. At the last Annual Meeting,

the Commission urged on the government the setting aside of the Eastern slope of the Rockies as a forest reserve to preserve the equality of the water-supply of Alberta and Saskatchewan, and it is gratifying to note that the reservation has been recently made by Order-in-Council.

The Committee on Water and Water-Powers has adopted the general policy that no grants of power should be made unless conditional upon development within a specified time, and a rental charge revisable from time to time, so as to give the public the benefit of the unearned increment of value due to the advance in the wealth and population of the community generally. Information is being collected regarding the amount of power developed and capable of being developed and, this summer, engineers have been securing field data regarding the water-power of Quebec and of the Maritime Provinces. This information is absolutely necessary as a basis for the recommendation the Committee is constantly being asked to make by Parliament, respecting the scope of the privileges to be granted private corporations who wish to develop water-powers.

The initial work of the remaining committees also consists largely of gathering information. This is particularly true of the Committee on Fisheries, Game and Fur-bearing Animals. Perhaps in no other field is there such great scope for effective work to be done in harmonizing conflicting jurisdictions, and in securing the more extensive adoption of artificial means of increasing the supply of a valuable natural resource as in that of our fisheries. Some of the important problems the Committee on Minerals has to give attention to are waste-

fulness in smelting processes and methods of mining, mine accidents and the use of explosives in mining operations. The Committee on Public Health can secure from the other committees a great deal of information of value to it in its campaign against disease and unsanitary conditions.

From this brief sketch of the work of conservation in Canada, it will be

seen that accurate research and effective publicity are imperative to the success of any permanent policy of conservation. It is only when these two are combined that the best results can be obtained in harmonizing laws now working at cross purposes, in adjusting conflicts of jurisdiction and in evolving a unified policy of conservation in which the interests of no class or community are prejudiced.



IN NORTHERN QUEBEC.

Some Impressions of Scottish Agriculture.

By W. LOCHHEAD, B.A., M.Sc., Professor of Biology, Macdonald College.

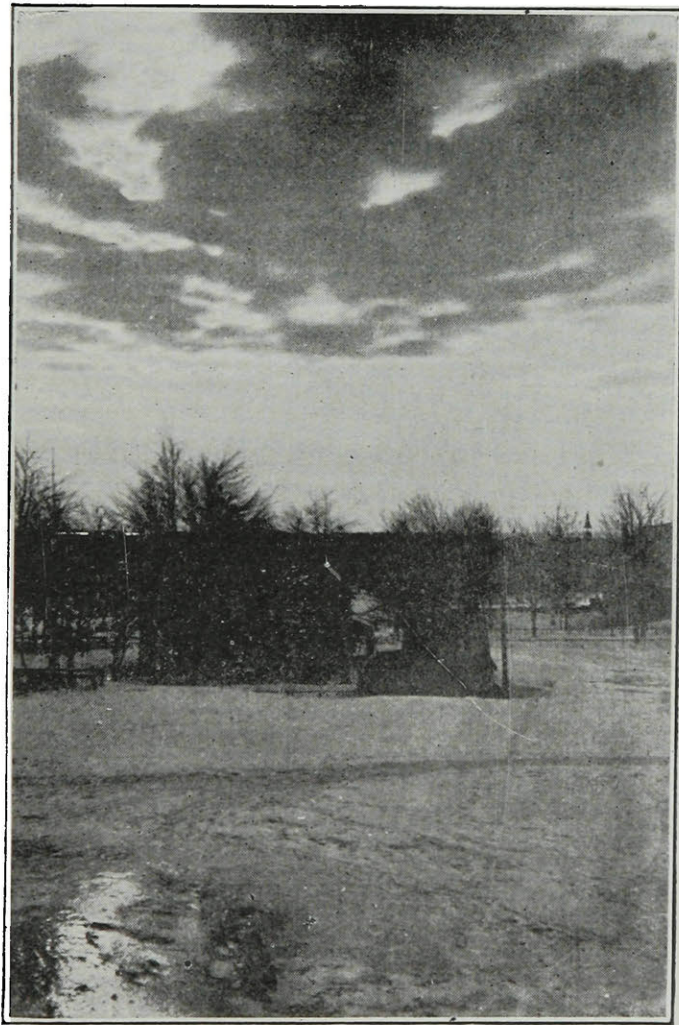


IT WAS the writer's privilege this summer to spend over a month in Scotland, mainly in the rural sections where agricultural conditions and methods at once provoked comparison with those in Canada.

However, it must be acknowledged that a visitor who spends but a month

erate in the different districts. His observations must necessarily be of a bird's eye nature, and perhaps on longer and closer investigation his conclusions might be quite different from those formed from his first impressions.

At the outset it may be said that in a comparison of the agricultural conditions of Scotland and Canada, three



NIGHT SCENE FROM THE COLLEGE.

in Scotland is hardly in a position to draw safe and definite conclusions regarding her agricultural conditions. He has not time to study sufficiently at close range the many problems of the Scottish farmer or the factors that op-

ifferences stand out more or less prominently. First, the majority of Scottish farmers are tenant-farmers and pay rent to a titled land-owner; second, there is a good home market at their very gates for all kinds of farm produce;

and third, agriculture is considered only of secondary importance in the eyes of the Government and does not receive the financial help and encouragement it gets in Canada. Recognition of these three differences helps one to understand better the peculiar conditions under which the Scottish farmers work.

With reference to the system of tenant-tenure of land, much can be said in its favor, especially for conditions such as prevail in Great Britain. In many districts the tenure period is five years, the long lease having gone out of favor. The landlord, represented by his agent or factor, in many cases pays for half the up-keep of the roads, the repairs to old buildings or the erection of necessary new buildings, the planting of hedges, the cost of drainage (less the interest on the same), and the largest share in the maintenance of the parish church.

In arable districts the tenant pays a rental varying from one pound to one pound ten shillings and more per acre, according to the nature and location of the land. In spite of this large rental and the cost of chemical fertilizers which amounts almost to another small rental, most farmers in southern Scotland are laying by in hard cash as much or even more than the average Canadian farmer of the Eastern provinces.

What is the explanation of this? The main factor is, the writer believes, the proximity of the Scottish farmer to the best markets of the world. The cost of transportation (a very important item) is largely saved, and he receives the highest prices for his products. It would be well within the mark to say that he gets one-third more for his products than the Canadian farmer. Moreover, the Scottish farmer saves money by doing without many

things that the Canadian farmer considers necessary. He does not have as many kinds of costly machinery lying about, and the writer believes he is more careful of what he has. While he believes thoroughly in American farm machinery, he does not buy it simply to keep up with the style.

Again, the Scottish farmer works his land more intensively and gets larger returns from his fields. This is accomplished by more careful cultivation and by the application of chemical fertilizers. The virgin richness of the land has gone out of it centuries ago, and the use of fertilizers is to him a matter of necessity. In most districts good crops of clover can be grown, but there is a need for the addition of potash and phosphates to the soil. One sees fewer weeds in the fields than in Canada, and nearly every square rod of arable land is drained. More than a century ago, rotation of crops was practised, in fact some landlords insisted upon it in the rent-lease.

The relation between tenant and landlord is on the whole quite satisfactory in England and Scotland, and the high-class intensive farming that is practised is encouraged in many ways by the landlord. It is doubtful if the ownership of the land by the farmers themselves would conduce to a better agriculture. It is almost certain that in time, when the natural fertility of the soil in this country has been exploited, and the growing population demands a more intensive system of cultivation, the tenant and landlord problem will loom up here too. The ownership of the land will naturally fall to those who have the money wherewith to make the costly improvements that will be necessary.

The drawback to tenant-tenure is this: the improvements on the farm belong to the landlord. There are many dis-

tricts in Scotland where farms have been worked for centuries by the same family, and most of the real improvements during this time have been made by the tenants. But the rentals have also risen, so that the present tenants are paying for the improvements made by their fathers and grandfathers. While there is scope for a man with a family on a Scottish farm, there is little opportunity for the sons, when they desire to marry and settle down, to get farms of their own. These men are now strongly attracted to Canada, and many of the best men are leaving home to take up land and become their own landlords. With a small capital these young men will be able to take possession of unimproved farms and develop them, with the assurance that these farms will soon become valuable with the general rise of farm values in a new country.

Scotland, although a small country, carries on many branches of agriculture. South of Glasgow the dairy industry largely prevails, with the addition of sheep-raising in the hilly districts. South and north of Edinburgh mixed farming is the rule, while in Perthshire and Aberdeenshire cattle feeding and breeding is carried on with great profit. Scotland has acquired an enviable reputation for her fine breeds of live stock, fine examples of which are finding their way every year in large numbers to the United States, Canada, and other countries. As a visitor to the Highland Show in Dumfries in July, the writer was strongly impressed with the many fine types of horses, cattle and sheep on exhibition. That live stock breeding is a profitable line of business is acknowledged by the canny Scot himself, and herein lies one of his sources of revenue—one almost unknown to Canadians.

In southern Scotland, where the

dairy industry is carried on very extensively, most of the milk is made on the premises into cheese which is sold wholesale for about 13 cents per pound. The price is not so high this season, but it will average about 12 cents. The majority of the herds are composed of high grade or pure-bred Ayrshires, and one is impressed with the uniformly large number of good milkers in the herds. The average of eighteen herds near Kilmarnock, the writer was told, was close on 7000 pounds in 1907, and good dairymen make as high as \$100 per cow per year.

A visitor is rather surprised at the large proportion of a Scottish dairy farm given to pasture. However, the grass grows luxuriantly and is able to furnish food for large herds. Indian corn cannot be grown to advantage and is never planted, but turnips give large yields. The usual rotation is oats-oats-hay-hay-pasture for several years. Danish farmers, on the other hand, prefer to cultivate most of the land, believing that it is more profitable to raise feed for the cattle than to leave large areas for pasture.

Early potato growing is a specialized form of agriculture, which is well developed along the west coast of Ayrshire, where both climate and soil are specially favorable. The crop is planted very early, and the rich, sandy loam soil responds quickly to the warm sun and the invigorating fertilizers, of which a very large quantity is used. The growers frequently speak of 350 and 400 bushels per acre.

Sheep farming is a profitable industry in the hilly districts, but the writer was told that the skilful, patient shepherd of a generation ago and more, is hard to find. Emigration has taken away the young men to other lands, where greater returns await their

labors; and the shepherds of to-day are in many cases mere hirelings.

The writer had also an opportunity of looking into the question of agricultural education, both in England and Scotland. Technical instruction such as makes the young men of the farm more intelligent regarding their life-work is not nearly so practical as that given in our Canadian agricultural colleges. As a matter of fact, the practical instruction in Animal and Cereal Husbandry is woefully deficient. The one bright exception is the instruction given at the Kilmarnock Dairy School, of which the head is a Canadian, trained in Canadian methods.

It is difficult to get the farmers' sons to attend the Agricultural Schools. For this, two reasons may be assigned. The farmers, as a rule, are conservative and are unwilling to change their methods. Because they have been fairly successful they vainly imagine that their methods cannot be improved upon. Again, with good reason, they look with suspicion on the kind of instruction given at the colleges in those practical lines that appeal most directly

to them. They despise *book* farmers, and consequently look down upon agricultural schools where live-stock and crops are studied by means of lectures only.

It is taking the people of the British Isles a long time to understand and believe that agricultural instruction can be made practical and of direct use to the farmers, and at the same time cultural in the best sense of the term. The old ideal of the large universities, where so many of the public men are educated, largely prevails, and an education that does not include large doses of Classics, Mathematics and Philosophy is still looked down upon. Signs are not wanting, however, that a saner view of education will soon be taken, and that agricultural education will be dealt with more generously by the Boards of Agriculture and by the Government. On the other hand, much high-class scientific investigation along agricultural lines is being done at various centres, notably at Rothamsted, Cambridge, and Wye. The defect lies in the lack of means of bringing the results of these investigations home to the farmers themselves.

Getting in Touch with the Farmer.



NLESS in perfect confidence with the surrounding communities, an Agricultural College, far more so than any other, cannot accomplish its greatest usefulness. Its sphere comprises not only the son within its walls, but also the farmer on his land. Hence it is evident that, while the former may be instructed at first hand, and made to realize that farming is applied

science, scarcely half its mission is being fulfilled until the latter is brought under its enlightening influence. But here the problem assumes a different aspect, requiring more subtle and indirect treatment.

It is only natural that men, who have worked the soil in their own wilful and generally methodless fashion for generations, should resent having their field invaded by a class of people

whom they are apt to consider rank outsiders. Be this the result of ignorance or not, it is generally the light in which new Agricultural Colleges are regarded. In making this statement, the author has in mind the great majority of farmers, and does not mean to imply that it is true of all of them. To do so would be distinctly wrong, for there are men whose agricultural accomplishments are fully equal to those of any College. Thus until the College can make such advances to the farmer that he will understand his feeling of resentment as a confession of inferiority and regard the Institution as a benefactor rather than a rival; until the first step in bridging the psychological gap is taken by the College, the visible results of its influence on the countryside will be little or none.

How can this be done to best advantage? Granting that the eye is the direct road to the brain, it follows that demonstrations are the surest means of differentiating good and bad practices. At country fairs the College can exhibit its produce. It can demonstrate cheese and buttermaking, apple packing, and canning. If time permits, methods and foods for milk production can be tested, and common errors brought to light. Of course the work may be done by experts, but on such occasions student work accompanied by good explanation seems to be more effective.

The various farmers' associations, and other organizations with the same purpose in view,—that of bettering agricultural conditions,—can avail themselves of trained College specialists, who are willing to devote considerable time to giving popular lectures at their meetings. Provided the audience be properly grasped, and not more than

one or two kindred subjects dealt with, much good work can be done in this way. A concrete example of the necessity of not confusing the audience with a variety of subjects by as many lecturers is the following. At a recent corn convention in Essex, Ont., a certain professor handled the subject of corn and corn only before an audience of 150 people. At the next meeting 250 were present, corn still monopolizing the general attention. When the lecturer appeared on the third day, the meeting was so large that several hundreds were turned away from the hall, and a motion to form a corn association was enthusiastically carried. Meetings of the opposite type have frequently proved failures. It is an important part of extension work, this providing of experienced lecturers, and one that is a sure means of arousing interest.

The mountain cannot come to Mahomet, however, so some means must be taken to bring about the reverse reaction. The College invites excursions conducted by county agricultural societies to visit its farm during the growing season, thus affording good opportunity for observation. Have you not watched in silent amusement the incredulous expressions of men who have travelled only 20 miles to see crops twice as heavy, and corn three times as high and uniform as they habitually produce at home? Their ejaculations are often astonishing. The experimental plots too, on excursion days, are a source of vast interest, especially when the professor in charge and his assistants are on hand to answer questions. And the stables! "Gosh, Mandy, did ye ever see such hogs?" This and similar expressions show that unconsciously the visitor has forgotten himself and

is becoming inspired to go home and raise good ones too.

In the depths of winter when the outdoor work is at a standstill, the College provides a series of short courses lasting about 10 days each and dealing with totally practical subjects. To these the farmer is bid welcome, and those who come find a Mecca for many troubles. Weeds, fungous diseases, and blights can here be properly explained. Once understood the remedy is often obvious. Lectures are given on rotations, stock raising, poultry keeping and seed selection. Men come intending to hear something about grain and stay until they are reminded there is not another course for them. On returning, they tell their neighbours, not because they cannot keep a good thing to themselves, but because they believe that all should know what they have learnt. Are there not students at many colleges of this nature who first saw the buildings on an excursion day, or whose big brother took a short course? Truly the spirit for betterment is contagious.

The kaleidoscope of new problems to which farmers are continually subjected, demands a body of men who can devote much time to their solution. A research department (whether it be so called or not) is therefore a necessary part of the Agricultural College. New

pests and diseases affecting stock and plants seem to arise in different regions without cessation, and unless the College were capable of rendering assistance to its clientele, by the publishing of bulletins on such subjects when necessary, it would also fall short of its ideal. New fields of science, uncharted as the air, are being exploited, so that when the results of such work are needed they may be supplied. Is not the Agricultural College, though a new institution, destined to play a great part in the future of the Race? It is a necessity.

Education, extension, and research then, are the great pathways of its influence. Their enunciation is simple enough; not so, however, the beginning of their application. Macdonald College, the newest and most complete of its kind in Canada, situated in a Province that has long been hampered by ignorance on the larger part of the farming population, and rumbling with subdued racial and religious feeling, steps out to enlighten whom it may. Its difficulties are many and peculiar, but its friends are staunch. That it may follow the upward path, however, as has done its mother institution at Guelph, and be regarded in the near future as indispensable to farmers by farmers, is our sincerest hope.

A. S.